



GENERAL DYNAMICS

2022 Annual Report

Dear Fellow Shareholder

Your company had another solid year in a difficult environment as the ramifications of the pandemic continued to impact our industrial base in different ways. Revenue increased 2.4% to \$39.4 billion, net earnings rose 4.1% to \$3.4 billion and earnings per fully diluted share increased 5.5% to \$12.19. Operating cash flow was \$4.6 billion. After capital expenditures, our free cash flow was \$3.5 billion, an efficient cash conversation rate of 102% of net income. During the year, we focused on driving operating performance, supporting the supply chain and generating strong free cash flow.* The market responded and our share price rose 19.0%. Our total shareholder return for the year including dividends was 21.7%.

In 2022, your company invested \$1.1 billion in capital expenditures across our businesses to support our growth. We also paid \$1.4 billion in dividends and repurchased approximately 5.3 million shares for \$1.2 billion.

Following a strong 2021, order activity and backlog were once again very good. We enjoyed a 1.1-to-1 book-to-bill ratio and at year end had a total backlog of \$91.1 billion. Total estimated contract value, which includes options and indefinite delivery indefinite quantity contracts, was nearly \$128 billion.

Our Aerospace businesses had a very strong year. Sales, earnings, margin and backlog all increased nicely. Demand was robust, with a book-to-bill ratio of 1.5-to-1, with orders of \$12.6 billion. Aerospace ended the year with a backlog of \$19.5 billion. Over the past two years Gulfstream has received over 400 net orders. All said and done, Aerospace backlog was up 20% in 2022 and a staggering 68% since the end of 2020.

Certification efforts with the FAA continue, focused on the G700. We anticipate FAA certification this summer, depending on FAA time and resources. The G800 should be certified approximately six months later.

Combat Systems delivered solid performance in a year of stable revenue, earnings and margin, as older programs began to phase out and newer programs came online. Demand for the groups' products, however, was higher than we had anticipated. Land Systems won the Mobile Protected Firepower vehicle, the first all-new Army armored combat vehicle in decades. Progress on the vehicle is off to a strong start. The brutal invasion of Ukraine regrettably changed the threat in Europe, and European nations are responding with increased defense spending. That demand is driving increased orders for European combat vehicles, U.S. armored vehicles and munitions.

The Technologies group had a solid year in a very challenging operating environment. Revenue of \$12.5 billion was up just slightly from 2021, with GDIT growth offset by supply chain challenges at Mission Systems. Earnings were down 3.8% because of Mission Systems' supply chain interruptions, even though GDIT reported its highest margin and its highest earnings in the last four years.

The group's backlog growth was solid notwithstanding an ongoing trend of customer solicitations pushing to the right and recurring award protests. GDIT received over \$11 billion in awards during the year, almost 20% higher than 2021. Mission Systems finished the year with a 1.1x book-to-bill and a capture rate in excess of 80%, putting them in a good position as they emerge from the supply chain headwinds they have faced.

The Marine Systems growth story continues. Revenue was up 4.9% for the full year to over \$11 billion. Operating earnings were up 2.6% for the full year to almost \$900 million. This is the highest ever full year of revenue and earnings for the Marine group. Since 2017, the group has grown revenue from \$8 billion to \$11 billion in 2022. This is a 6.6% compound annual growth rate with an average increase of \$600 million per year. Similarly, earnings have grown from \$685 million in 2017 to \$900 million in 2022, a 5.5% compound annual growth rate.

Marine Systems had strong orders during the year, generating a 1.1-to-1 book-to-bill ratio, including the receipt of two Columbia-class contract modifications for \$5.4 billion at Electric Boat, further underpinning the long-term growth we expect in the group.

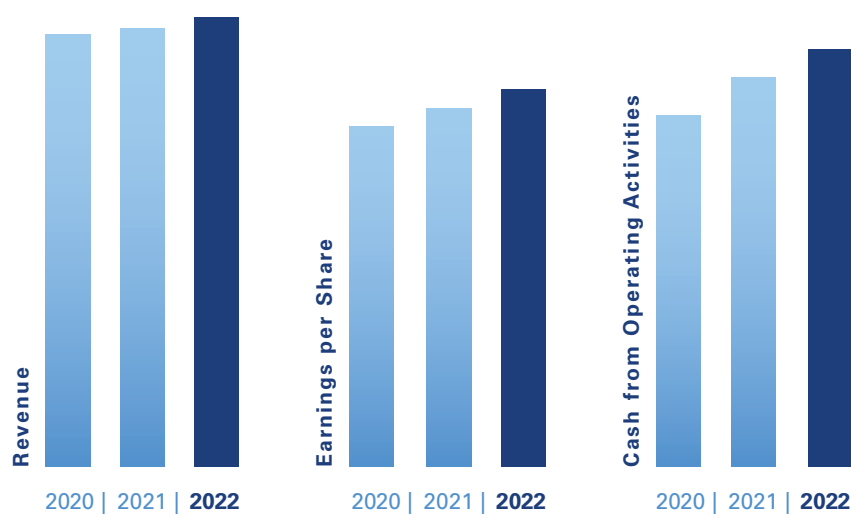
The first ship of the Columbia-class is now over 30% complete and we are preparing to start construction of the second ship. The Virginia-class attack submarine program delivered two boats in 2022, despite the supply chain challenges facing the industrial base, and is set to deliver two more this year.

As a concluding reflection, I have been your company's CEO for 10 years now. In that period, the price of General Dynamics stock has increased from \$69.27 to \$248.11, a 258% increase, outperforming the S&P 500 and S&P Aerospace and Defense indices by a considerable margin. At the beginning of 2013 our total outstanding shares were 353.7 million. As we begin 2023, that has been reduced to 274.4 million, an over 20% decrease as a result of the \$16.6 billion spent on share repurchases over the period. Your dividend has grown from a quarterly \$0.51 per-share rate in 2012 to a \$1.26 per-share rate last year, a nearly 150% increase, resulting in total dividends paid over the ten-year period of \$10.3 billion. In continuing this trend, the Board of Directors has just increased the quarterly dividend to \$1.32, a 4.8% increase. We have taken these actions while continuing to invest in the growth and strength of our business. Not surprisingly, sales over the same period rose from \$31.2 billion to \$39.4 billion, a 26% increase, and net earnings increased from \$2.4 billion to \$3.4 billion, a 44% increase, demonstrating the strong operating leverage of your company. As we look to the remainder of 2023, our operating performance, strong backlog and free cash flow generation put us in good stead to continue to drive value for our shareholders.



PHEBE N. NOVAKOVIC
Chairman and CEO
March 24, 2023

FINANCIAL HIGHLIGHTS



	2020	2021	2022
Revenue	\$37,925	\$38,469	\$39,407
Operating Earnings	4,133	4,163	4,211
Diluted EPS	11.00	11.55	12.19
Cash from Operating Activities	3,858	4,271	4,579
Cash Dividends Paid per Share	4.32	4.67	4.97

*Dollars in millions, except per-share amounts
Years Ended December 31*

Our focus on operating discipline, cash generation and investment in future growth enables us to meet rapidly evolving customer requirements while consistently returning value to shareholders.

10.7%

OPERATING
MARGIN

12.6%

RETURN
ON INVESTED
CAPITAL*

21.7%

TOTAL
SHAREHOLDER
RETURN*

\$1.6 Billion

CAPITAL
EXPENDITURES
AND COMPANY-
SPONSORED R&D

\$1.4 Billion

DIVIDENDS
PAID

\$1.2 Billion

SHARE
REPURCHASES

\$91.1 Billion

BACKLOG

\$127.7 Billion

TOTAL
ESTIMATED
CONTRACT VALUE

*See 10-K for discussion of non-GAAP measures. Total shareholder return is defined as change in share price with dividends reinvested.



AEROSPACE

We design, manufacture and service the most advanced and reliable family of business jets in the world. Gulfstream's powerful brand recognition is the product of its relentless focus on innovation. Our disciplined and consistent investment in research and development has enabled Gulfstream to introduce an entirely new family of aircraft since 2019, continuing to raise the bar on performance, safety, efficiency and comfort.

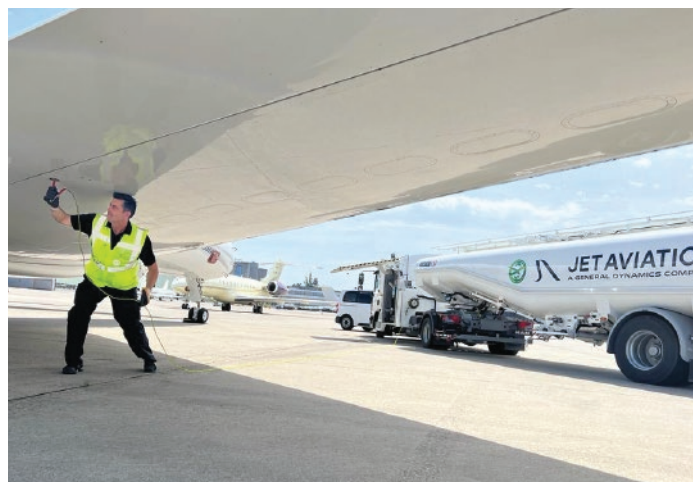
In 2022, we successfully completed the first flight of our new ultra-long-range, ultra-large-cabin G800, the industry's longest-range aircraft. Our all-new flagship G700 kicked off its debut world tour in Dubai and is expected to achieve FAA certification this summer. The large-cabin G400 is expected to begin deliveries in 2025, pending certification. Gulfstream offers comprehensive support for the more than 3,000 Gulfstream aircraft in service around the world with an extensive network of factory-owned service centers.

Our other aerospace subsidiary, Jet Aviation, offers a comprehensive suite of business aircraft services, including completions, fixed-base operations, fleet management, maintenance, repair and overhaul. With approximately 50 locations worldwide, Jet Aviation ensures the global availability of services for Gulfstream aircraft around the world, as well as aircraft produced by other manufacturers.

We lead the industry in sustainability by designing aircraft that achieve outstanding fuel efficiency, while minimizing noise and emissions. We promote the availability and adoption of sustainable aviation fuel (SAF) in support of the industry-wide effort to achieve net-zero carbon emissions by 2050. As the business aviation market grows, we are poised to remain the manufacturer and service provider of choice for the most discerning customers.

This year's highlights include:

- Delivered a total of 120 aircraft, 96 of which were large-cabin aircraft
- Increased backlog 19.8%
- Achieved 25 new city-pair speed records during the G700's world tour, traveling to 20 countries across six continents
- Successfully completed the first flight of the ultra-long-range, ultra-large-cabin G800, officially launching the test program
- Delivered the 500th aircraft in the G650/G650ER family, 10 years after receiving FAA and EASA certification
- Earned the National Business Aviation Association's inaugural Sustainable Flight Department Accreditation
- Conducted the first-ever flight by a business jet manufacturer using 100% SAF
- Continued to grow Gulfstream's customer support network, with new expansions opened or announced in Fort Worth and Dallas, Texas, and Mesa, Arizona, and additional service offerings in Farnborough, U.K.



Photos

Left: Gulfstream fleet of aircraft

Top: Gulfstream Symmetry Flight Deck

Bottom: Jet Aviation sustainable aviation fuel truck

\$8.6
BILLION
REVENUE

\$19.5
BILLION
BACKLOG

2022



MARINE SYSTEMS

Our Marine Systems segment is the leading designer and builder of nuclear-powered submarines and a leader in surface combatant and auxiliary ship design and construction for the U.S. Navy, as well as Jones Act ships for commercial customers. We operate through three business units: Electric Boat, headquartered in Groton, Connecticut; Bath Iron Works in Bath, Maine; and NASSCO in San Diego, California. Each has outlying facilities spanning the East and West Coasts of the United States.

Electric Boat is the prime contractor for the Columbia-class ballistic-missile submarine, a 12-boat, \$113 billion program of record the Navy considers its top acquisition priority. It is also the lead shipyard for the Virginia-class attack submarine, with 17 boats in backlog scheduled for delivery through 2032, nine of which will include a new payload module that adds strike and special operations capabilities.

Bath Iron Works builds and manages lifecycle support for the Arleigh Burke-class (DDG-51) guided-missile destroyer, closing 2022 with 10 ships in backlog, scheduled for delivery through 2029. NASSCO builds John Lewis-class (T-AO-205) fleet replenishment oilers and Expeditionary Sea Base (ESB) ships that serve as afloat forward-staging bases for U.S. Marines and special operations forces, and provides maintenance and repair services to the Navy for all of its surface ship classes.

In response to the increase in demand for submarines and surface ships, we have made substantial investments in our facilities, growing our workforce and strengthening our supply chains. The increase in capacity and capabilities will support the exceptional growth planned for our shipbuilding business for the next two decades.

This year's highlights include:

- Achieved highest ever full-year revenue and operating earnings, delivering two Virginia-class submarines and one T-AO-205 oiler, completing acceptance trials of a DDG-51 destroyer, and redelivering nine ships to the Navy following major maintenance availabilities
- Awarded \$5.4 billion from the Navy, with additional options totaling \$585 million, for advance procurement and advance construction of Columbia-class submarine components as well as enhancements to the submarine industrial base
- Awarded \$2 billion from the Navy for long-lead materials and construction of an additional ESB auxiliary support ship and two additional T-AO-205 oilers, with a \$715 million option for an additional T-AO-205 oiler
- Awarded \$1.2 billion in new contracts to provide maintenance, modernization and repair services for DDG-51 destroyers, Wasp-class amphibious assault ships and Los Angeles-class submarines
- Awarded a total of \$985 million from the Navy, with additional options totaling \$320 million, for Virginia-class submarine lead-yard services and design efforts, planning yard support services for operational strategic and attack submarines, and advanced nuclear plant studies in support of the Columbia-class submarine program

Photos

Left: Columbia-class submarine rendering

Top: Future USS Carl M. Levin (DDG-120)

Bottom: Future USNS Robert F. Kennedy (T-AO-208)



\$11
BILLION
REVENUE

\$45.7
BILLION
BACKLOG

2022



COMBAT SYSTEMS

Our Combat Systems segment designs, manufactures and sustains the world's most lethal, mobile and survivable land combat platforms as well as munitions and medium-caliber armaments for the U.S. and allied militaries through three business units: Land Systems, European Land Systems, and Ordnance and Tactical Systems.

Our installed base of nearly 23,000 vehicles across nearly 40 countries worldwide positions us well for modernization programs, support and sustainment services and future platform development. Land Systems is the sole-source producer of two foundational platforms central to the U.S. Army's warfighting capabilities: the Abrams main battle tank and the Stryker wheeled combat vehicle, both of which have been significantly modernized. In 2022, Land Systems was selected to produce the Mobile Protected Firepower (MPF) vehicle, which will enhance firepower for the Army's Infantry Brigade Combat Teams (IBCTs).

We also produce market-leading light armored vehicles (LAVs), including the Piranha and Pandur armored vehicles, the Ajax and ASCOD family of medium-weight tracked combat vehicles, and the Duro and Eagle classes of wheeled tactical vehicles. Our mobile bridge systems business offers an essential capability for militaries around the globe, manufacturing mobile systems capable of supporting payloads up to 100 tons. Our continued investment in robotic and autonomous vehicle technology has opened new markets for supporting combat troops in the field.

Ordnance and Tactical Systems produces armaments and munitions that support kinetic military systems throughout the U.S. arsenal. In response to the conflict in Eastern Europe, we remain closely aligned with our customers' requirements to surge production to meet current and future needs.

This year's highlights include:

- Selected by the Army to build the MPF vehicle, awarded \$410 million with a maximum potential value of \$1.1 billion for low-rate initial production
- Awarded more than \$1 billion in contracts with additional option value of \$465 million for various munitions, including ammunition, bomb bodies and other various weapons, ordnance and missile subcomponents
- Awarded a total of \$1.2 billion to produce or upgrade Stryker wheeled combat vehicles for the U.S. Army
- Awarded a \$1.1 billion contract to provide 250 Abrams M1A2 System Enhancement Package version 3 (SE Pv3) main battle tanks to Poland
- Awarded \$850 million to produce armored combat vehicles for international customers, including Austria, Switzerland, Canada and Luxembourg
- Awarded a total of \$770 million to upgrade and support Abrams tanks for the Army
- Designed and produced AbramsX and StrykerX technology demonstrators, incorporating next-generation electronic architecture, hybrid electric engines and integrated active protection systems with the ability to reduce fuel consumption by 50% in support of the Army's electrification and climate strategies



Photos

Left: M1A2 Abrams main battle tank

Top: 155mm artillery rounds

Bottom: Multi-Utility Tactical Transport (MUTT)

\$7.3

BILLION

REVENUE

\$13.3

BILLION

BACKLOG

2022



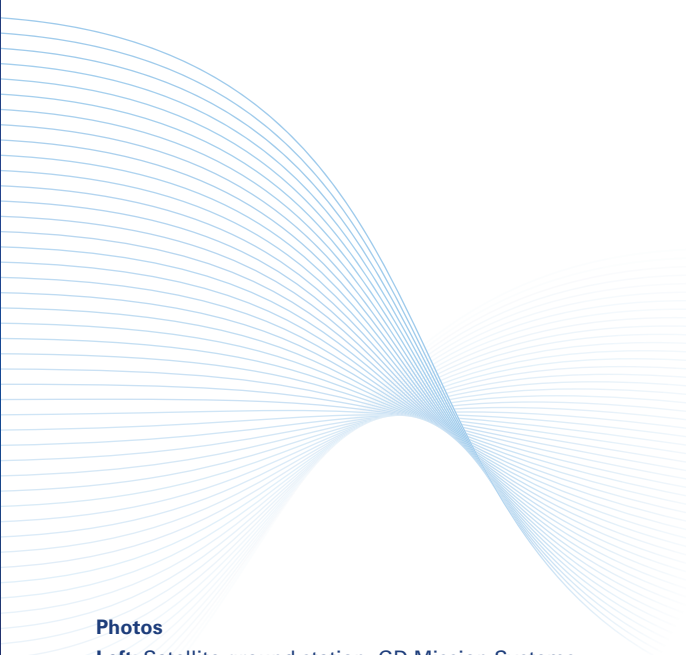
TECHNOLOGIES

Our Technologies segment, consisting of General Dynamics Information Technology (GDIT) and General Dynamics Mission Systems, offers a full spectrum of services, technologies and products that combine specialized hardware and software. We address the growing demand from customers who prioritize technology solutions as a critical element of their missions.

Our nearly 40,000 technologists, engineers, mission experts and other professionals, who often possess top security clearances, are embedded across the defense, intelligence, federal civilian, and state markets, enabling customers to leverage cloud computing, high-performance computing, data analytics, cybersecurity and artificial intelligence (AI) to secure the nation's most sensitive information, improve government services and inform critical decision-making.

As an original equipment manufacturer, we are well positioned to provide purpose-built products that bring these capabilities reliably and securely to the most rugged or inhospitable locations, from the battlefield to the undersea domain to deep space.

GDIT and Mission Systems largely share the same customer base and increasingly go to market together, benefitting from significant complementary offerings and solution sets.



Photos

Left: Satellite ground station. GD Mission Systems and a partner company will support and operate similar low-earth-orbit satellite stations for the Space Development Agency.
Top: GDIT's Geospatial Innovation Center in St. Louis
Bottom: Bluefin 9 unmanned underwater vehicle



This year's highlights include:

- Awarded a contract with \$4.5 billion maximum potential value from the National Geospatial-Intelligence Agency to provide hybrid cloud services and information technology (IT) design, engineering and operations and sustainment services
- Awarded \$1.6 billion for several key classified contracts
- Awarded more than \$750 million in Environmental Protection Agency contracts and options for high-performance computing, managed application, information, networking, enterprise and security services
- Awarded a Navy contract with \$275 million maximum potential value for Columbia- and Dreadnought-class ballistic missile submarine fire control systems
- Awarded a \$150 million supercomputing, cybersecurity and software development contract for the Alabama Supercomputer Authority
- Awarded \$160 million, with a maximum potential contract value of \$325 million, from the U.S. Space Development Agency to build and operate ground systems for the new low earth orbit (LEO) satellite network
- Expanded our network of technology labs to accelerate the development of prototypes and innovation cycles in cloud, cyber, AI, 5G and software development, as well as Identity, Credential and Access Management (ICAM) solutions
- Achieved National Security Agency (NSA) certification for the newly developed TACLANE-C175N Cryptographic High Value Product voice and data encryptor

\$12.5
BILLION
REVENUE

\$12.7
BILLION
BACKLOG



OUR ETHOS

HONESTY. TRANSPARENCY. TRUST. ALIGNMENT.

These four values undergird everything we do at General Dynamics — they are our defining moral character. Through our shared Ethos, we ensure that we continue to be good stewards of the investments our shareholders, customers, employees and communities make in us, now and in the future.

GENERAL DYNAMICS

General Dynamics Corporation
11011 Sunset Hills Road
Reston, VA 20190

The appearance of U.S. Department of Defense photos does not imply or constitute DoD endorsement.

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Chief Executive Officer

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Cecil D. Haney

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Laura J. Schumacher

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LEADERSHIP

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Information Technology



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GENERAL DYNAMICS

UNITED STATES SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-K

(Mark One)

☒ ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended December 31, 2022

OR

☐ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from _____ to _____

Commission File Number 1-3671

GENERAL DYNAMICS CORPORATION

(Exact name of registrant as specified in its charter)

Delaware

13-1673581

State or other jurisdiction of incorporation or organization

I.R.S. Employer Identification No.

11011 Sunset Hills Road

Reston, Virginia

20190

Address of principal executive offices

Zip code

(703) 876-3000

Registrant's telephone number, including area code

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock	GD	New York Stock Exchange

Securities registered pursuant to Section 12(g) of the Act:

None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☒ No ☐

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ☐ No ☒

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer ☒ Accelerated filer ☐ Non-accelerated filer ☐ Smaller reporting company ☐ Emerging growth company ☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report. Yes ☒ No ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

The aggregate market value of the voting common equity held by non-affiliates of the registrant was \$54,293,907,678 as of July 3, 2022 (based on the closing price of the shares on the New York Stock Exchange).

274,430,054 shares of the registrant's common stock, \$1 par value per share, were outstanding on January 29, 2023.

DOCUMENTS INCORPORATED BY REFERENCE:

Part III incorporates by reference information from certain portions of the registrant's definitive proxy statement for the 2023 annual meeting of shareholders to be filed with the Securities and Exchange Commission within 120 days after the close of the fiscal year.

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PART I

ITEM 1. BUSINESS

(Dollars in millions, except per-share amounts or unless otherwise noted)

BUSINESS OVERVIEW

General Dynamics is a global aerospace and defense company that specializes in high-end design, engineering and manufacturing to deliver state-of-the-art solutions to our customers. We offer a broad portfolio of products and services in business aviation; ship construction and repair; land combat vehicles, weapons systems and munitions; and technology products and services. Our leadership positions in attractive business aviation and defense markets enable us to deliver superior and enduring shareholder returns.

Our company consists of 10 business units, which are organized into four operating segments: Aerospace, Marine Systems, Combat Systems and Technologies. We refer to the latter three collectively as our defense segments. To optimize market focus, customer intimacy, agility and operating expertise, each business unit is responsible for the development and execution of its strategy and operating results. This structure allows for a lean corporate function, which sets the overall strategy and governance for the company and is responsible for allocating and deploying capital.

Our business units seek to deliver superior operating results by building industry-leading franchises. To achieve this goal, we invest in advanced technologies, pursue a culture of continuous improvement, and strive to be the low-cost, high-quality provider in each of our markets. The result is long-term value creation measured by strong earnings and cash flow and an attractive return on capital.

Over the past 10 years, we have invested in our business to create, renew or expand our portfolio of products and services across our businesses. This includes product development investments in Aerospace to bring to market an all-new lineup of business jet aircraft, capital investments in Marine Systems to support significant growth in U.S. Navy ship and submarine construction plans over the next two decades, development of next-generation platforms and technologies to meet customers' emerging requirements in Combat Systems, and strategic acquisitions to achieve critical mass and build out a complete spectrum of solutions for our Technologies customers. As we emerge from this period of significant investment, we expect to realize an attractive return from these investments in each of our segments and continue to evaluate our capital deployment opportunities to deliver long-term growth and enduring value to our shareholders.

Following is additional information on each of our operating segments. For a supplemental discussion of segment performance and backlog, see Management's Discussion and Analysis of Financial Condition and Results of Operations in Item 7.

AEROSPACE

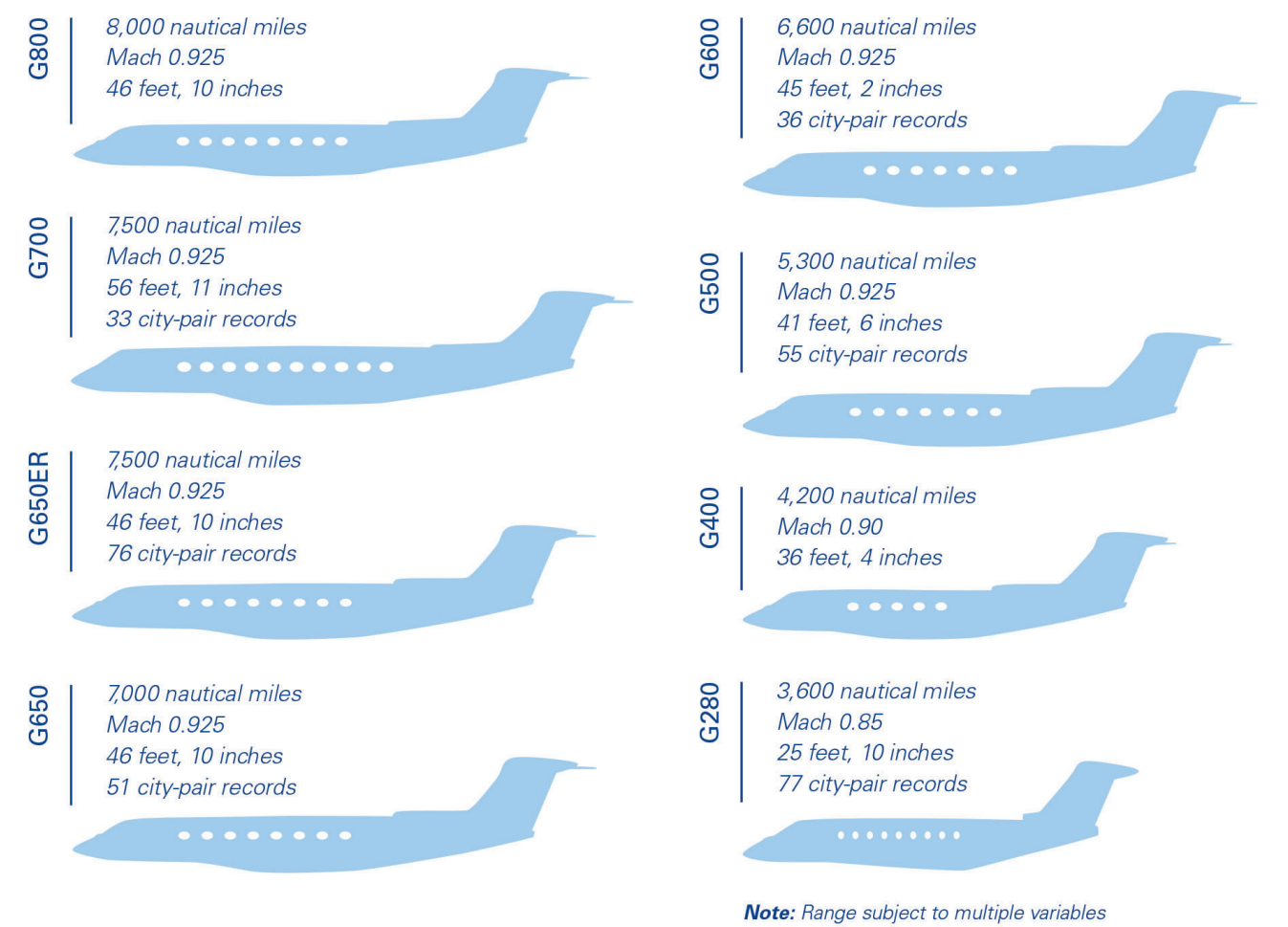
Our Aerospace segment is recognized as a leading producer of business jets and the standard bearer in new technology aircraft, aircraft repair, support and completion services. The segment consists of our Gulfstream and Jet Aviation business units. We have earned our reputation through:

- superior aircraft design, quality, performance, safety and reliability;
- technologically advanced flight deck and cabin systems; and
- industry-leading customer support.

We believe the key to long-term value creation in the business jet industry is steady investment in new aircraft models and technologies and in customer service capabilities. As a result, since we acquired Gulfstream more than 20 years ago, we have made significant investments in research and development (R&D), state-of-the-art manufacturing facilities, and maintenance and support through a combination of product development efforts, capital expansion and the acquisition of Jet Aviation’s global support network. We are also the industry leader in the use of sustainable aviation fuel (SAF) and energy efficient engines.

We are committed to continual investment in R&D to create new aircraft that consistently broaden customer offerings while raising the bar for safety and performance. The result is the unprecedented development of an all-new lineup of the most technologically advanced business jet aircraft in the world. The Gulfstream family of aircraft offer industry-leading cabin, cockpit and safety technologies and the longest ranges at the fastest speeds in their respective classes.

The following represents Gulfstream’s current product line, along with the maximum range, maximum speed, cabin length (excluding baggage), and total number of city-pair speed records held for each aircraft:



The most recent additions to the in-service Gulfstream fleet are two large-cabin aircraft, the G500 and G600, which entered service in 2018 and 2019, respectively. These clean-sheet (i.e., all-new) aircraft replace the G450 and G550 models, whose combined family has an installed base of more than

1,650 aircraft around the world. Our investment included development of a new wing, new avionics, new fuselage and new ergonomically designed larger interiors, as well as systems and technologies to improve the manufacturing process and quality of the platform. As a result, the G500 and G600 are faster, more fuel efficient, and have greater cabin volume, reduced emissions, more range and improved flight controls compared with the aircraft they are replacing. These aircraft hold more than 90 city-pair speed records, and at year-end 2022, cumulative deliveries for the aircraft totaled over 200.

The next model to join the Gulfstream lineup is the ultra-long-range, ultra-large-cabin G700. It combines our most spacious cabin with our advanced Symmetry Flight Deck, the industry's most technologically advanced flight deck, which we launched on our G500 and G600 aircraft, and the superior high-speed performance of all-new engines to create best-in-class capabilities. Gulfstream is in the process of flight testing and seeking U.S. Federal Aviation Administration (FAA) certification of the G700, which currently has logged more than 3,200 test hours. We expect the G700 to enter service following certification from the FAA in the summer of 2023.

In 2021, we introduced two new aircraft, the ultra-long-range, ultra-large-cabin G800 and large-cabin G400, completing a nearly two-decade effort to develop an all-new family of Gulfstream aircraft. Both aircraft combine our industry-leading high-speed range and efficiency, safety enhancements, and our advanced Symmetry Flight Deck. The G800 is Gulfstream's longest-range aircraft, with an 8,000 nautical mile range at Mach 0.85, and it is expected to enter service approximately six months after the G700, pending FAA certification. The G400 is a clean-sheet design developed in concert with the G500 and G600, thus expanding the commonality across the Gulfstream family of aircraft. Expected to enter service in 2025, pending FAA certification, the G400 will join a market segment in which Gulfstream has not participated for several decades.

The ultra-long-range, ultra-large-cabin G650 and G650ER continue to generate significant customer interest, with more than 500 aircraft of this family currently operating in more than 50 countries. Since the first G650 entered service in December 2012, its capabilities and reliability have led to significant sales and expansion of our installed base around the globe. Gulfstream's current product line holds more than 325 city-pair speed records, more than any other business jet manufacturer, led by the G650ER, which holds the National Aeronautic Association's polar and westbound around-the-world speed records.

Our disciplined and consistent approach to new product development has allowed us to introduce repeatedly first-to-market capabilities that set industry standards for safety, performance, quality, speed and comfort. Product enhancement and development efforts include initiatives in advanced avionics, composites, flight-control and vision systems, acoustics, and cabin technologies.

Gulfstream designs, develops and manufactures aircraft in Savannah, Georgia, including all large-cabin models. The mid-cabin G280 is assembled by a non-U.S. partner. All models are outfitted in Gulfstream's U.S. facilities. As Gulfstream's aircraft portfolio and customer base have grown and become increasingly global in reach over the years, we have invested in our facilities and operations around the world. At our Savannah campus, we added new purpose-built manufacturing facilities, increased aircraft service capacity, opened a customer-support distribution center and expanded our R&D capabilities.

We offer comprehensive support for the more than 3,000 Gulfstream aircraft in service around the world and operate an extensive network of factory-owned service centers. We continue to invest in these maintenance, repair and overhaul (MRO) facilities and inventory to accommodate fleet growth. We also operate a 24/7 year-round customer support center and offer on-call Gulfstream aircraft technicians

ready to deploy around the world for customer service requirements under our Field and Airborne Support Team (FAST) rapid-response unit.

In addition to expanding the reach of Gulfstream's aircraft maintenance network outside the United States, Jet Aviation provides a comprehensive suite of innovative aircraft services for aircraft owners and operators around the world. With approximately 50 locations throughout North America, Europe, the Middle East and the Asia-Pacific region, our offerings include maintenance, aircraft management, charter, staffing and fixed-base operator (FBO) services.

Jet Aviation manages approximately 300 business aircraft globally on behalf of individuals and corporate owners. We operate a leading global FBO network and support all aircraft types with a full range of maintenance services, including 24/7 global aircraft-on-ground support. We also operate one of the world's largest custom completion and refurbishment centers for both narrow- and wide-body aircraft and perform modifications, upgrades and lifecycle sustainment support for various government fleets. We continue to grow our global footprint through acquisitions, expansions and significant renovations in strategic business aviation markets most frequented by our customers.

The following map displays the broad reach of our combined Gulfstream and Jet Aviation services network, including authorized service centers:



The Aerospace segment places a priority on sustainability throughout its manufacturing and service operations, producing aircraft that maximize fuel efficiency while offering customers options to reduce or eliminate their carbon footprints. Gulfstream and Jet Aviation have been at the forefront of the industry by adopting and expanding the availability of SAF, which achieves as much as an 80% reduction in carbon dioxide emissions per gallon over its lifecycle compared to petroleum-based jet fuel. Gulfstream's service and test aircraft have flown more than 2 million nautical miles on SAF since 2016, and in 2019 Gulfstream became the first business jet manufacturer to make SAF available to customers. Gulfstream also offers operators the ability to achieve carbon-neutral travel by facilitating the purchase of carbon-offset credits. In addition to actively expanding the availability of SAF at its FBO locations,

Jet Aviation allows customers to purchase SAF at locations where it is not available through a book-and-claim system. Since 2019, Jet Aviation has uploaded more than 10 million gallons of blended SAF to its customers.

Revenue for the Aerospace segment was 22% of our consolidated revenue in 2022 and 21% in 2021 and 2020. Revenue by major products and services was as follows:

Year Ended December 31	2022	2021	2020
Aircraft manufacturing	\$ 5,876	\$ 5,864	\$ 6,115
Aircraft services	2,691	2,271	1,960
Total Aerospace	\$ 8,567	\$ 8,135	\$ 8,075

MARINE SYSTEMS

Our Marine Systems segment is the leading designer and builder of nuclear-powered submarines and a leader in surface combatant and auxiliary ship design and construction for the U.S. Navy. We also provide maintenance, modernization and lifecycle support services for Navy ships and maintain the most sophisticated marine engineering expertise in the world to support future capabilities. Our ability to design, build and maintain our nation's most technologically sophisticated warships is a critical element of the U.S. defense industrial base. In addition to Navy ships, we design and build ocean-going Jones Act ships for commercial customers. Marine Systems consists of three business units — Electric Boat, Bath Iron Works and NASSCO.

In support of our Navy customer's significant increase in demand for submarines and surface ships, we are making substantial investments to expand our facilities, grow and train our workforce, and expand our supply chain. The resulting increase in capacity and capabilities will support the unprecedented growth expected in our shipbuilding business, particularly submarines, over the next two decades.

Electric Boat is the prime contractor and lead shipyard on all Navy nuclear-powered submarine programs. The business is responsible for all aspects of design and engineering and leads the construction of both Virginia-class attack submarines and Columbia-class ballistic-missile submarines.

The Navy procures Virginia-class submarines in multi-boat blocks at a two-per-year rate. Along with an industry partner, we are currently working on Blocks IV and V in the program, with 17 Virginia-class submarines in our backlog scheduled for delivery through 2032. Nine of the boats in Block V include the Virginia Payload Module, an 84-foot Electric Boat-designed-and-built hull section that adds four additional payload tubes, more than tripling the strike capacity of these submarines and providing unique capabilities to support special missions.

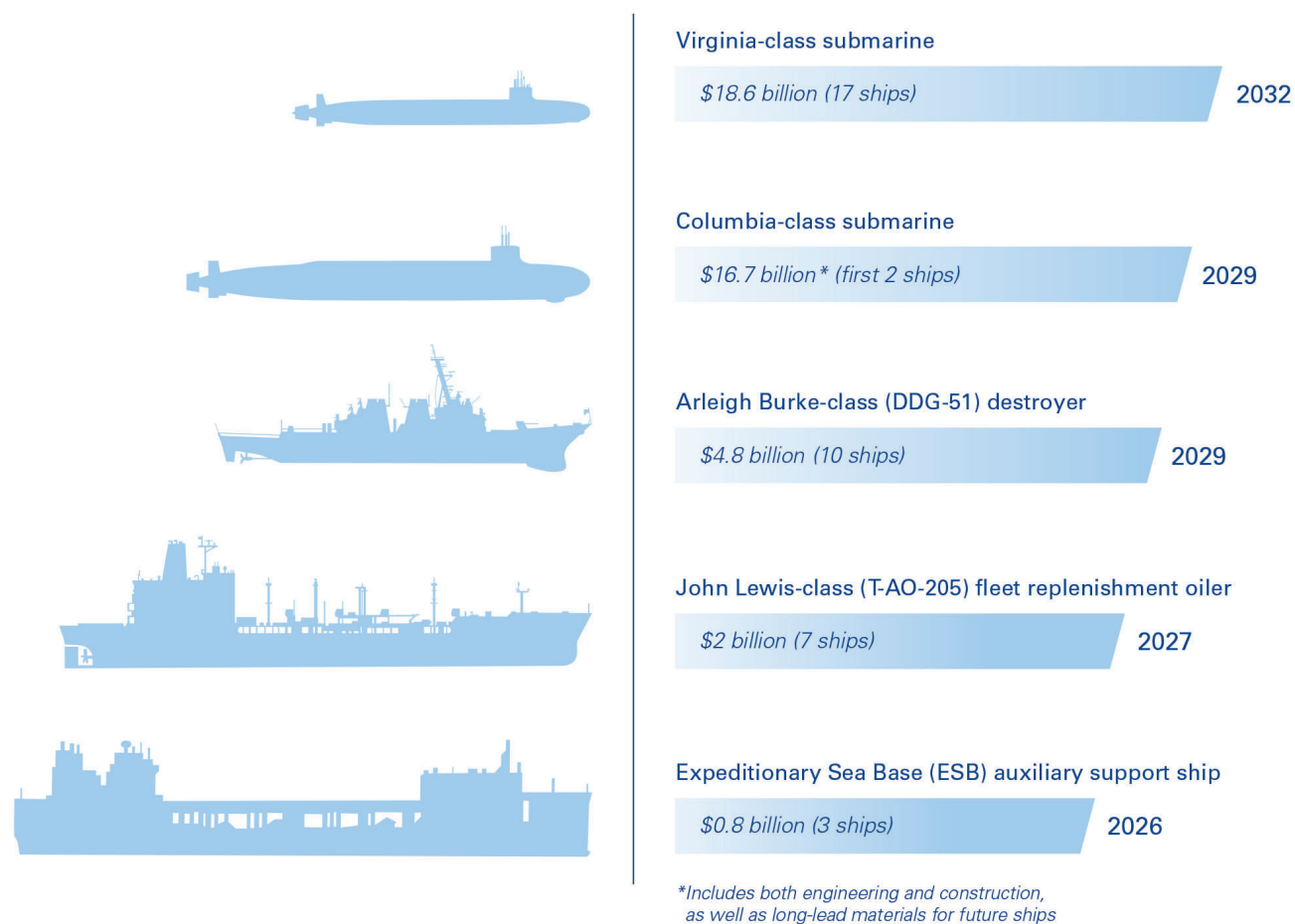
The Columbia-class ballistic-missile submarine is a 12-boat program that the Navy considers its top acquisition priority. Accordingly, the program has received the highest possible rating from the government's Defense Priorities and Allocations System. These submarines will provide strategic deterrent capabilities for decades, with the first boat delivering in 2027 to begin replacement of the current Ohio-class ballistic-missile submarine fleet as it reaches the end of its service life. Construction is scheduled to continue for two decades, and the value of the Navy's program of record is in excess of \$110 billion. The submarine's design was more than 80% complete at the time we began construction of the first boat in 2020, nearly twice as mature as any of the Navy's previous submarine programs at the start of construction.

We are investing \$1.8 billion of capital in expanded and modernized facilities at Electric Boat to support the growth in submarine construction and expect the investments to be substantially complete by the end of 2023. Equal to the commitment of capital is our commitment to developing our Electric Boat workforce. While the steepest portion of our personnel ramp is behind us, we still expect the Electric Boat workforce to grow another 25% by the end of the decade, particularly in support of Columbia-class production. Along with strong contributions from the states of Connecticut and Rhode Island, we continue to invest in the training and tools necessary for our employees to deliver these next-generation submarines to the Navy on time and on budget. We are also working with our network of approximately 3,000 suppliers — mostly small businesses — to support concurrent production of the two submarine programs.

Bath Iron Works builds the Arleigh Burke-class (DDG-51) guided-missile destroyers and manages modernization and lifecycle support for the class. We have a total of 10 ships in backlog scheduled for delivery through 2029.

NASSCO specializes in Navy auxiliary and support ships and is currently building the Expeditionary Sea Base (ESB), which serves as an afloat forward-staging base for U.S. Marines and special operations forces, and the John Lewis-class (T-AO-205) fleet replenishment oiler. Work on the three ESBs in backlog will continue into 2026, while the seven T-AO-205 ships currently in backlog have deliveries planned into 2027. NASSCO has also designed and built crude oil and product tankers and container and cargo ships for commercial customers, satisfying Jones Act requirements that ships carrying cargo between U.S. ports be built in U.S. shipyards.

On December 31, 2022, backlog for our major ship construction programs and the scheduled final delivery date of ships currently in backlog were as follows:



In addition to design and construction activities, our Marine Systems segment provides comprehensive post-delivery services to modernize and extend the service life of these and other Navy ships. NASSCO conducts full-service maintenance and surface-ship repair operations in Navy fleet concentration areas in San Diego, California; Norfolk, Virginia; Mayport, Florida; and Bremerton, Washington. Electric Boat provides submarine maintenance and modernization services in a variety of U.S. locations, and Bath Iron Works provides lifecycle support services for Navy surface ships in both U.S. and overseas ports. In support of allied navies, we offer program management, planning, engineering and design support for submarine construction programs.

Revenue for the Marine Systems segment was 28% of our consolidated revenue in 2022, 27% in 2021 and 26% in 2020. Revenue by major products and services was as follows:

Year Ended December 31	2022	2021	2020
Nuclear-powered submarines	\$ 7,310	\$ 7,117	\$ 6,938
Surface ships	2,561	2,328	2,055
Repair and other services	1,169	1,081	986
Total Marine Systems	\$ 11,040	\$ 10,526	\$ 9,979

COMBAT SYSTEMS

Our Combat Systems segment is a premier manufacturer and integrator of land combat solutions worldwide, including wheeled and tracked combat vehicles, weapons systems and munitions. The segment consists of three business units — Land Systems, European Land Systems (ELS), and Ordnance and Tactical Systems (OTS).

Combat Systems creates long-term value through operational excellence — high-quality, on-schedule and on-budget performance — combined with investments in innovative technologies that modernize existing platforms and develop next-generation capabilities to meet our customers' rapidly evolving requirements. We maintain our market-leading position by focusing on innovation, affordability and speed to market to deliver increased survivability, performance and lethality on the battlefield. Our large installed base of wheeled and tracked vehicles around the world and expertise gained from research, engineering and production programs position us well for modernization programs, support and sustainment services, and future development programs.

Land Systems is the sole-source producer of two foundational products central to the U.S. Army's warfighting capabilities — the M1A2 Abrams main battle tank and Stryker wheeled combat vehicle. Both of these platforms are core components of the multi-domain, joint war fight envisioned on the battlefield of the future.

We are maximizing the effectiveness and lethality of the Army's tank fleet with next-generation Abrams upgrades, providing technological advancements in communications, power generation, fuel efficiency, optics and armor. Even as we are delivering this modernized platform in the System Enhanced Package Version 3 (SEPV3) configuration, we are developing an Abrams SEPV4 configuration with third-generation forward-looking infrared sights (3GEN FLIR) and additional advanced capabilities that will allow this platform to adapt and incorporate transformative capabilities into the future. We are also upgrading Abrams tanks for several non-U.S. partners.

The Stryker is an eight-wheeled, medium-weight combat vehicle that combines lethality, mobility and survivability. Land Systems continues to develop upgrades and enhancements to this highly versatile and combat-proven platform to address the Army's evolving operational needs. We are currently fielding an enhanced Stryker platform that includes the double-V-hull for survivability, increased power, improved cross-country mobility and an advanced digital, in-vehicle network. We have completed fielding these vehicles for the first of nine Army brigades, as well as for the Army's Ranger Regiment. In addition, coordination continues with the Army for next-generation upgrades to the platform and new uses for the vehicle. Leveraging our rapid prototyping expertise and customer intimacy, we continue to expand the mission capabilities of this platform, including an air defense mission package (M-SHORAD), a state-of-the-art electronic warfare suite, a high-energy laser, a high-power microwave, and several command post options.

In 2022, we introduced new capabilities within each of these two foundational product lines in support of the Army's climate and electrification strategies, including incorporating next-generation electronic architecture technology, hybrid electric engines, integrated active protection systems, and the ability to employ air and ground robotic teaming. AbramsX is a next-generation main battle tank technology demonstrator that features significantly reduced weight for improved mobility and transportation and delivers the same tactical range as the M1A2 Abrams with 50% less fuel consumption. Like AbramsX, StrykerX offers next-generation capabilities such as silent movement, silent watch, exportable electric power and reduced fuel consumption via a hybrid diesel-electric power

pack. Our focus on innovation and technological investments in these platforms positions us to continue to meet our customers' evolving requirements.

In addition, during 2022 we were awarded a low-rate initial production (LRIP) contract for the Army's Mobile Protected Firepower (MPF) vehicle — the first ground combat vehicle to transition from prototype to production in 40 years. The MPF vehicle will enhance the relevance of Infantry Brigade Combat Teams in large-scale combat operations against near-peer threats. The highly lethal, survivable and mobile direct-fire combat vehicle melds recently developed and battle-tested designs to dominate ground threats on the multi-domain battlefield.





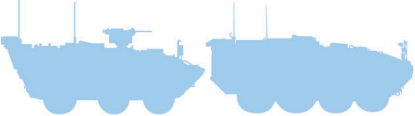

Combat Systems provides similar capabilities for U.S. allies through export opportunities and through our operations in several countries around the world, including Canada, the United Kingdom, Spain, Switzerland, Austria, Germany and Romania. As a result, we have a market-leading position in light armored vehicles (LAVs) with approximately 12,000 of the high-mobility, versatile Pandur, Piranha and other LAVs in service worldwide.

Land Systems is producing 399 new LAVs in eight variants, including ambulances, command posts, maintenance and recovery vehicles, and troop-carrying vehicles, for the Canadian Army, as well as upgrading its existing fleet. Land Systems is also producing the British Army's Ajax armored fighting vehicle, a next-generation, medium-weight tracked combat vehicle. With six variants, including a reconnaissance vehicle, an armored personnel carrier, and various support platforms, the Ajax family of vehicles offers advanced electronic architecture and proven technology for an unparalleled balance of survivability, lethality and mobility, along with high reliability for a vehicle in its weight class.

ELS is producing and upgrading Piranha vehicles, a premier 8x8 armored combat vehicle, around the world. We are currently providing Piranha 5 vehicles for several countries, including Denmark, Romania and Spain. Additionally, we provide mobile bridge systems with payloads ranging from 100 kilograms to 100 tons to customers worldwide. We offer the ASCOD, a highly versatile tracked combat vehicle with multiple versions, including the Spanish Pizarro and the Austrian Ulan. ELS also offers Duro and Eagle tactical vehicles in a range of options and weight classes and is currently producing these vehicles for Denmark, Luxembourg, Switzerland and Germany, while providing a full range of product support for the German armed forces.

We are expanding our platform capabilities through continued investment in robotic and autonomous vehicle technology. We have the Multi-Utility Tactical Transport (MUTT), a semi-autonomous robotic platform that can be equipped with an array of modular mission payloads for use alongside dismounted soldiers. This platform was selected as the Army's first robotic vehicle program of record and is officially designated as the Small Multipurpose Equipment Transport (SMET). Additionally, we have the Tracked Robot 10-ton (TRX) prototype, a medium-sized, semi-autonomous combat vehicle that enables critical battlefield roles, such as direct and indirect fire, autonomous resupply, reconnaissance and other battlefield missions.

On December 31, 2022, the installed base for our major vehicle programs, as well as the quantity and scheduled final delivery date of vehicles and vehicle upgrades in backlog were as follows:

	Vehicle	Installed Base		Backlog	
		Vehicle Quantity	Countries	Vehicle Quantity	Final Delivery
	ABRAMS Main Battle Tank	3,879	7	665	2026
	STRYKER Wheeled Vehicle	3,750	2	533	2024
	Light Armored Vehicle (LAV)	4,750	9	548	2025
	AJAX / ASCOD Tracked Vehicle	485	4	509	2028
	PANDUR / PIRANHA Armored Vehicle	7,207	25	592	2027
	DURO / EAGLE Tactical Vehicle	2,623	5	957	2024

Complementing these military-vehicle offerings, OTS designs, develops and produces a comprehensive array of sophisticated weapon systems for ground forces, including the M2/M2-A1 heavy machine guns and MK19/MK47 grenade launchers. OTS also produces next-generation weapon systems for shipboard and aircraft applications, including high-speed Gatling guns for all U.S. fighter aircraft, including the F-35 Joint Strike Fighter.

OTS's munitions portfolio covers the full breadth of naval, air and ground forces applications across all calibers and weapon platforms for the U.S. government and its non-U.S. partners. Globally, we maintain a market-leading position in the supply of Hydra-70 rockets, bomb bodies, large-caliber tank ammunition, medium-caliber ammunition, military propellants, mortar and artillery projectiles. OTS is also the systems integrator for the next generation of artillery solutions in support of the Army's Indirect Fire Modernization objectives. Additionally, OTS maintains a leading position providing missile subsystems in support of U.S. tactical and strategic missiles, provisioning both legacy and next-generation missiles with critical aerostructures, control actuators, high-performance warheads and cutting-edge hypersonic rocket cases.

Revenue for the Combat Systems segment was 18% of our consolidated revenue in 2022 and 19% in 2021 and 2020. Revenue by major products and services was as follows:

Year Ended December 31	2022	2021	2020
Military vehicles	\$ 4,581	\$ 4,699	\$ 4,687
Weapons systems, armament and munitions	2,024	2,006	1,991
Engineering and other services	703	646	545
Total Combat Systems	\$ 7,308	\$ 7,351	\$ 7,223

TECHNOLOGIES

Our Technologies segment provides a full spectrum of services, technologies and products to an expanding market that increasingly seeks solutions combining leading-edge electronic hardware with specialized software. The segment is organized into two business units — Information Technology (GDIT) and Mission Systems. Together they serve a wide range of military, intelligence, federal civilian and state customers with a diverse portfolio that includes:

- information technology (IT) solutions and mission-support services;
- mobile communication, computers, command-and-control and cyber (C5) mission systems; and
- intelligence, surveillance and reconnaissance (ISR) solutions.

Over the past decade, the Department of Defense (DoD), the intelligence community and federal civilian agencies have increasingly prioritized technology solutions as a critical element of their missions, transforming technology resources from back-office support functions to a strategic priority for this customer community. The coronavirus (COVID-19) pandemic, the cyber threat landscape and demand for advanced warfighter connectivity have accelerated these trends, adding urgency to required technology investments. The result is a significant increase in federal IT modernization and technology spending in recent years and a shift to large-scale, end-to-end, highly engineered solutions that require a broad array of integrated technology services and hardware offerings to meet these customer demands.

GDIT and Mission Systems share the same defense, intelligence and federal civilian customer base and increasingly go to market together to meet the ever-changing information-systems and mission-support needs of these customers. In addition, with the convergence of digital technologies, the two businesses benefit from significant complementary offerings and solution sets. The segment makes strategic investments in new and emerging technologies and combines an in-depth understanding of the evolving technology landscape with an intimate knowledge of our customers' mission needs. The segment's highly skilled workforce is one of its key differentiators and comprises approximately 40,000 employees, including technologists, engineers, mission experts and cleared personnel dedicated to solving the toughest security and technology challenges facing the United States and its allies.

With a broad network of global partners, the segment develops solutions that keep its customers at the leading edge of technology in support of their missions. This includes operating a network of technology labs to prototype solutions and accelerate the development of advanced capabilities for customers' environments. As technology continues to advance, we are at the forefront of new technological trends, including cloud computing, cybersecurity, zero trust, fifth generation (5G) technology, artificial intelligence and machine learning (AI/ML), data analytics, and high-performance computing.

GDIT modernizes large-scale IT enterprises and deploys the latest technologies to optimize and protect customer networks, data and information. Operating thousands of complex digital modernization

programs across the federal government, GDIT's expansive portfolio includes cloud services, cybersecurity, network modernization, AI/ML, application development, high-performance computing, and 5G and next-generation wireless communications.

Mission Systems offers solutions across all domains and produces a unique combination of products and capabilities that are purpose-built for essential C5ISR applications. Our technologies and products are often built into platforms and integrated systems on which our customers rely. The business' portfolio includes prime contract programs to provide innovative defense-electronics solutions as well as subcontract efforts that enhance the capabilities of large-scale land, air, sea and space platforms.

The Technologies segment leverages its scale, partnerships and deep knowledge of its customers' missions and challenges to bring innovation to those customers across a portfolio of thousands of contracts. While no individual contract is material to the segment's results, the following highlights provide a sampling of the value of this business.

GDIT delivers a full spectrum of cloud solutions and services to modernize customers' legacy IT infrastructures and systems. These cloud capabilities advance security and accelerate access to cutting-edge technologies such as high-performance computing and AI/ML. For the National Geospatial-Intelligence Agency (NGA), GDIT is providing hybrid cloud services, including commercial clouds and data centers, and innovative IT design, engineering, implementation and operations support services to the NGA and its mission partners. In the federal civilian market, GDIT is delivering a scalable, hybrid multi-cloud platform to modernize the United States Patent and Trademark Office's IT infrastructure and services.

We apply AI/ML to expand the human capacity to make better decisions and implement smarter actions as we automate, secure and enhance our customers' operations. For the Department of Veterans Affairs (VA), GDIT leverages managed services and AI/ML to accelerate veteran benefits claims processing, develops applications and software to improve the veteran user experience, and provides on-demand 24/7/365 IT support to more than 500,000 VA personnel nationwide. In the federal civilian sector, GDIT's high-performance supercomputers, ranked 49th and 50th fastest in the world by TOP500, run the National Oceanic and Atmospheric Administration (NOAA) operational models used to forecast the weather and model climate data.

To adapt to a constantly evolving threat landscape, GDIT embeds cyber solutions into every aspect of digital modernization. More than 3,000 cyber professionals support cyber projects across 30 agencies in the federal government. This work includes supporting the U.S. Army National Guard's Department of Defense Information Network's IT infrastructure, cybersecurity, application hosting and associated services. This enterprise network, one of the largest in the DoD, provides soldiers with access to the internet; allows them to connect securely with other databases and networks; and provides leaders with tools for training, mission planning and execution.

Mission Systems develops and manufactures high-assurance encryption products that are widely deployed to protect national security systems, data and networks against persistent threats. These Type 1 National Security Agency (NSA)-certified products and capabilities provide needed protection for classified voice, video and data in-transit or at-rest in all domains. Capabilities range from enterprise systems to embedded applications required for terrestrial, airborne or space environments.

We are working with our Army customer to adapt elements of advanced resilient radio frequency (RF) and 5G technologies to address battlefield realities such as jamming, spoofing, cyberattacks and

lack of ground connectivity. We also provide similar capabilities to non-U.S. customers, including Canada and the United Kingdom.

Mission Systems continues to help advance our nation's dominance in the space domain. We designed and manufactured mission-critical communications and optical technologies for the National Aeronautics and Space Administration's (NASA) Artemis I and James Webb Space Telescope missions. Additionally, the U.S. Space Development Agency (SDA) selected Mission Systems to establish the ground operations and integration segment for Tranche 1 of the National Defense Space Architecture by building ground entry points and operations centers, as well as providing network operations and systems integration services for the SDA's next tranche of proliferated low-earth orbit satellites.

On the platform side, we have a more than 60-year legacy of providing advanced fire-control systems for the Navy's submarine programs. We are developing and integrating commercial off-the-shelf software and hardware upgrades to improve the tactical control capabilities for several submarine classes, including the Columbia and U.K. Dreadnought ballistic-missile submarines.

Mission Systems also continues to invest in autonomous capabilities, including through its Unmanned Undersea Vehicle (UUV) Manufacturing and Assembly Center of Excellence in Taunton, Massachusetts. The facility provides manufacturing, assembly, integration and testing capabilities for Mission Systems' Knifefish and Bluefin Robotics UUVs, as well as the recently awarded Hammerhead program for the Navy.

Revenue for the Technologies segment was 32% of our consolidated revenue in 2022, 33% in 2021 and 34% in 2020. Revenue by major products and services was as follows:

Year Ended December 31	2022	2021	2020
IT services	\$ 8,195	\$ 8,069	\$ 7,892
C5ISR solutions	4,297	4,388	4,756
Total Technologies	\$ 12,492	\$ 12,457	\$ 12,648

CUSTOMERS

In 2022, 70% of our consolidated revenue was from the U.S. government, 15% was from U.S. commercial customers, 9% was from non-U.S. government customers and the remaining 6% was from non-U.S. commercial customers.

U.S. GOVERNMENT

Our primary customer is the DoD. We also contract with other U.S. government customers, including the intelligence community and the Departments of Homeland Security and Health and Human Services. Our revenue from the U.S. government was as follows:

Year Ended December 31	2022	2021	2020
DoD	\$ 22,250	\$ 21,386	\$ 20,840
Non-DoD	4,808	4,862	4,726
Foreign military sales (FMS)*	633	598	737
Total U.S. government	\$ 27,691	\$ 26,846	\$ 26,303
% of total revenue	70 %	70 %	69 %

* In addition to our direct non-U.S. sales, we sell to non-U.S. governments through the FMS program. Under the FMS program, we contract with and are paid by the U.S. government, and the U.S. government assumes the risk of collection from the non-U.S. government customer.

Our U.S. government revenue is derived from fixed-price, cost-reimbursement and time-and-materials contracts. Our production contracts are primarily fixed-price. Under these contracts, we agree to perform a specific scope of work for a fixed amount. Contracts for research, engineering, repair and maintenance, and other services are typically cost-reimbursement or time-and-materials. Under cost-reimbursement contracts, the customer reimburses contract costs incurred and pays a fixed, incentive or award-based fee. The amount for an incentive or award fee is determined by our ability to achieve targets set in the contract, such as cost, quality, schedule and performance. Under time-and-materials contracts, the customer pays a fixed hourly rate for direct labor and generally reimburses us for the cost of materials.

Of our U.S. government revenue, fixed-price contracts accounted for 56% in 2022, 57% in 2021 and 59% in 2020; cost-reimbursement contracts accounted for 38% in 2022, 36% in 2021 and 35% in 2020; and time-and-materials contracts accounted for 6% in 2022, 7% in 2021 and 6% in 2020.

For information on the advantages and disadvantages of each of these contract types, see Note B to the Consolidated Financial Statements in Item 8.

U.S. COMMERCIAL

Our U.S. commercial revenue was \$5.7 billion in 2022, \$4.8 billion in 2021 and \$4.9 billion in 2020, which represented 15%, 12% and 13% of our consolidated revenue in each of the respective years. The majority of this revenue was for business jet aircraft and related services where our customer base consists of individuals and public and privately held companies across a wide range of industries.

NON-U.S.

Our revenue from non-U.S. government and commercial customers was \$6 billion in 2022, \$6.8 billion in 2021 and \$6.7 billion in 2020, which represented 15% of our consolidated revenue in 2022 and 18% in 2021 and 2020.

We conduct business with customers around the world. Our non-U.S. defense subsidiaries maintain long-term relationships with their customers and have established themselves as principal regional suppliers and employers, providing a broad portfolio of products and services.

Our non-U.S. commercial revenue consists primarily of business jet aircraft exports and worldwide aircraft services. While the installed base of aircraft is concentrated in North America, orders from customers outside North America represent a significant portion of our aircraft business with approximately 40% of the Aerospace segment's aircraft backlog on December 31, 2022.

COMPETITION

Several factors determine our ability to compete successfully in the defense and business aviation markets. While customers' evaluation criteria vary, the principal competitive elements include:

- the technical excellence, reliability, safety and cost competitiveness of our products and services;
- our ability to innovate and develop new products and technologies that improve mission performance and adapt to dynamic threats;
- successful program execution and on-time delivery of complex, integrated systems;
- our global footprint and accessibility to customers;
- the reputation and customer confidence derived from past performance; and
- the successful management of customer relationships.

DEFENSE MARKET COMPETITION

The U.S. government contracts with numerous domestic and non-U.S. companies for products and services. We compete against other contractors as well as smaller companies that specialize in a particular technology or capability. Outside the United States, we compete with global defense contractors' exports and the offerings of local, private and state-owned defense manufacturers. Our Marine Systems segment has one primary competitor with which it also partners on the Virginia-class submarine program, and to which it subcontracts on the Columbia-class submarine program. Our Combat Systems segment competes with a large number of U.S. and non-U.S. businesses. Our Technologies segment competes with many companies, from large government contracting and commercial technology companies to small niche competitors with specialized technologies or expertise. The operating cycle of many of our major programs can result in sustained periods of program continuity when we perform successfully.

We are involved in teaming and subcontracting relationships with some of our competitors. Competitions for major defense and other government contracting programs often require companies to form teams to bring together a spectrum of capabilities to meet the customer's requirements. Opportunities associated with these programs include roles as the program's integrator, overseeing and coordinating the efforts of all participants on a team, or as a provider of a specific component or subsystem.

BUSINESS JET AIRCRAFT MARKET COMPETITION

The Aerospace segment has several competitors for each of its Gulfstream products. Key competitive factors include aircraft safety, reliability and performance; comfort and in-flight productivity; service quality, global footprint and responsiveness; technological and new-product innovation; and price. We believe that Gulfstream competes effectively in all of these areas.

The Aerospace segment competes worldwide in the business jet aircraft services market primarily on the basis of quality, price and timeliness. While competition for each type of service varies somewhat, the segment faces a number of competitors of varying sizes for each of its offerings.

INTELLECTUAL PROPERTY

We develop technology, manufacturing processes and systems-integration practices. In addition to owning a large portfolio of proprietary intellectual property, we license some intellectual property rights to and from others. The U.S. government holds licenses to many of our patents developed in the

performance of U.S. government contracts, and it may use or authorize others to use the inventions covered by these patents. Although these intellectual property rights are important to the operation of our business, no existing patent, license or other intellectual property right is of such importance that its loss or termination would have a material impact on our business.

HUMAN CAPITAL MANAGEMENT

Our company is a global community of approximately 106,500 employees dedicated to our Ethos of transparency, trust, honesty and alignment. These four core values drive how we operate our business; govern how we interact with each other, our customers, partners and suppliers; guide the way that we treat our workforce; and determine how we connect with our communities. Our commitment to ethical business practices is outlined in our *Standards of Business Ethics and Conduct*, which states our expectation that all employees conduct business in accordance with our Ethos, applicable laws and our policies. Each employee is asked to acknowledge receipt, understanding of and compliance with our standards.

Due to the highly specialized nature of our business, we must hire and train skilled and qualified people to design and build the products and perform the services required by our customers. The health, welfare and safety of our employees is paramount throughout our workplaces. This effort starts with treating all employees with dignity and respect and providing them with fair, market-based, competitive and equitable compensation. We recognize and reward the performance of our employees in line with our pay-for-performance philosophy and provide a comprehensive suite of benefit options that aim to enable our employees and their dependents to live healthy and productive lives.

Across our businesses, we take measures to prevent workplace hazards, encourage safe behaviors and enforce a culture of continuous improvement to ensure our processes help reduce safety incidents and illnesses and comply with applicable health and safety laws. These efforts continue to be of the utmost importance as we address ongoing challenges, including those presented by the COVID-19 pandemic.

We recognize that our success as a company depends on our ability to attract, develop and retain qualified people. Our commitment to promoting diversity of thought, experience, perspectives, backgrounds and capabilities to drive innovation strengthens the solutions we deliver to our customers. General Dynamics works hard to promote an environment that values and supports all employees. We proudly support a work environment that respects diverse opinions, values individual skills, celebrates unique experiences and cultivates teamwork. These efforts are a demonstration of our dedication to equal employment opportunities that foster and support a principled, productive and inclusive work environment. We stand for basic universal human rights, including that employment must be voluntary. We track, measure and analyze our workforce trends to establish accountability for putting people first across our businesses and at every level of our company.

Our values motivate us to promote strong workplace practices with opportunities for development and training. Our training and development efforts focus on ensuring that our people are appropriately trained on critical job skills as well as on leadership behaviors that are consistent with our Ethos. We conduct rigorous succession planning exercises to ensure that key positions have the appropriate level of bench strength to provide for future key positions and leadership transitions. We listen to our people to assess areas of concern and levels of engagement.

2022 WORKFORCE STATISTICS

- Approximately 84% of our employees are based in the United States, of which roughly 71% are white, 29% are people of color, 19% are veterans of the U.S. armed forces and 7% have self-reported having a disability. The remaining 16% of our workforce is based internationally in over 65 countries with the primary concentrations being in North America and Europe.
- Our global workforce is 76% male and 24% female, and our senior leadership teams across the business are represented by 74% males and 26% females. During 2022, the diversity profile of our workforce continued to improve across our businesses, as we hired approximately 24,000 individuals of which 71% were male and 29% were female. For our approximately 19,800 U.S.-based hires in 2022, 60% were white and 40% were people of color.

RAW MATERIALS AND SUPPLIERS

We depend on suppliers and subcontractors for raw materials, components and subsystems. Our U.S. government customer is a supplier for some of our programs. These supply networks can experience price fluctuations and capacity constraints, which can put pressure on our costs. Effective management and oversight of suppliers and subcontractors is an important element of our successful performance. If our sources of supply are disrupted, particularly in instances where we rely on only one or two sources of supply, or in the event that international conflicts result in the disruption of manufacturing or trade relations for some supply components, our ability to meet our customer commitments could be adversely impacted. We attempt to mitigate risks with our suppliers by entering into long-term agreements and leveraging company-wide agreements to achieve economies of scale and by negotiating flexible pricing terms in our customer contracts.

REGULATORY MATTERS

U.S. GOVERNMENT CONTRACTS

U.S. government contracts are subject to procurement laws and regulations. The Federal Acquisition Regulation (FAR) and the Cost Accounting Standards (CAS) govern the majority of our contracts. The FAR mandates uniform policies and procedures for U.S. government acquisitions and purchased services. Also, individual agencies can have acquisition regulations that provide implementing language for the FAR or that supplement the FAR. For example, the DoD implements the FAR through the Defense Federal Acquisition Regulation Supplement (DFARS). For all federal government entities, the FAR regulates the phases of any product or service acquisition, including:

- acquisition planning;
- competition requirements;
- contractor qualifications;
- protection of source selection and supplier information; and
- acquisition procedures.

In addition, the FAR addresses the allowability of our costs, while the CAS addresses the allocation of those costs to contracts. The FAR and CAS subject us to audits and other government reviews covering issues such as cost, performance, internal controls and accounting practices relating to our contracts.

NON-U.S. REGULATORY

Our non-U.S. operations are subject to the applicable government regulations and procurement policies and practices, as well as U.S. policies and regulations. We are also subject to regulations governing investments, exchange controls, repatriation of earnings and import-export control.

BUSINESS JET AIRCRAFT

The Aerospace segment is subject to FAA regulation in the United States and other similar aviation regulatory authorities internationally, including the Civil Aviation Administration of Israel (CAAI), the European Aviation Safety Agency (EASA) and the Civil Aviation Administration of China (CAAC). For an aircraft to be manufactured and sold, the model must receive a type certificate from the appropriate aviation authority, and each aircraft must receive a certificate of airworthiness. Aircraft outfitting and completions also require approval by the appropriate aviation authority, which is often accomplished through a supplemental type certificate. Aviation authorities can require changes to a specific aircraft or model type before granting approval. Maintenance facilities and charter operations must be licensed by aviation authorities as well.

ENVIRONMENTAL

We are subject to a variety of federal, state, local and foreign environmental laws and regulations. These laws and regulations cover the discharge, treatment, storage, disposal, investigation and remediation of materials, substances and wastes identified in the laws and regulations. We are directly or indirectly involved in environmental investigations or remediation at some of our current and former facilities and at third-party sites that we do not own but where we have been designated a potentially responsible party (PRP) by the U.S. Environmental Protection Agency or a state environmental agency. As a PRP, we are potentially liable to the government or third parties for the cost of remediating contamination. In cases where we have been designated a PRP, we generally seek to mitigate these environmental liabilities through available insurance coverage and by pursuing appropriate cost-recovery actions. In the unlikely event that we are required to fully fund the remediation of a site, the current statutory framework would allow us to pursue contributions from other PRPs. We regularly assess our compliance status and management of environmental matters.

Operating and maintenance costs associated with environmental compliance and management of contaminated sites are a normal, recurring part of our operations. Historically, these costs have not been material. In addition, we could be affected by future laws or regulations imposed in response to concerns over climate change, the timing and effect of which are difficult to assess.

Changes in environmental and climate change laws or regulations, including laws relating to greenhouse gas emissions, could lead to new or additional investment in product designs or facilities and could increase environmental compliance expenditures, including increased energy and raw materials costs. Environmental costs are often recoverable under our contracts with the U.S. government. Based on information currently available and current U.S. government policies relating to cost recovery, we do not expect continued compliance with environmental regulations, including costs associated with changes in environmental and climate change laws or regulations, to have a material impact on our results of operations, financial condition or cash flows. For additional information relating to the impact of environmental matters, see Note M to the Consolidated Financial Statements in Item 8.

AVAILABLE INFORMATION

We file reports and other information with the Securities and Exchange Commission (SEC) pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended. These reports and information include an annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and proxy statements. Free copies of these items are made available on our website (www.gd.com) as soon as practicable. The SEC maintains a website (www.sec.gov) that contains reports, proxy and information statements, and other information.

In addition to the information contained in this Form 10-K, information about the company can be found on our website and our Investor Relations website (investorrelations.gd.com). Our Investor Relations website contains a significant amount of information about the company, including financial information, our corporate governance principles and practices, and other information for investors. We encourage investors to visit our website, as we frequently update and post new information about our company, and it is possible that this information could be deemed material information.

References to our website and the SEC's website in this Form 10-K do not constitute, and should not be viewed as, incorporation by reference of the information contained on, or available through, the websites. The information should not be considered a part of this Form 10-K, unless otherwise expressly incorporated by reference.

ITEM 1A. RISK FACTORS

An investment in our common stock or debt securities is subject to risks and uncertainties. Investors should consider the following factors, in addition to the other information contained in this annual report on Form 10-K, before deciding whether to purchase our securities.

Investment risks can be market-wide as well as unique to a specific industry or company. The market risks faced by an investor in our securities are similar to the uncertainties faced by investors in a broad range of industries. There are some risks that apply more specifically to our business.

Our revenue is concentrated with the U.S. government. This customer relationship involves some specific risks. In addition, our sales to non-U.S. customers expose us to different financial and legal risks. Despite the varying nature of our government and commercial operations and the markets they serve, each segment shares some common risks, such as the ongoing development of high-technology products and the price, availability and quality of commodities and subsystems.

Risks Relating to Our Business and Industry

The U.S. government provides a significant portion of our revenue. In 2022, 70% of our consolidated revenue was from the U.S. government. Levels of U.S. defense spending may be impacted by numerous factors, such as the domestic political environment, changes in national and international priorities, and threats to national security. Competing demands for federal funds can pressure various areas of spending. Decreases in U.S. government defense and other spending or changes in spending allocation or priorities could result in one or more of our programs being reduced, delayed or terminated, which could impact our financial performance.

For additional information relating to U.S. budget matters, see the Business Environment section of Management's Discussion and Analysis of Financial Condition and Results of Operations in Item 7.

U.S. government contracts are not always fully funded at inception, and any funding is subject to disruption or delay. Our U.S. government revenue is funded by agency budgets that operate on an October-to-September fiscal year. Early each calendar year, the President of the United States presents to the Congress the budget for the upcoming fiscal year. This budget proposes funding levels for every federal agency and is the result of months of policy and program reviews throughout the executive branch. For the remainder of the year, the Appropriations and Authorization Committees of the Congress review the President's budget proposals and establish the funding levels for the upcoming fiscal year. Once these levels are enacted into law, the Executive Office of the President administers the funds to the agencies.

There are two primary risks associated with the U.S. government budget cycle. First, the annual process may be delayed or disrupted. If the annual budget is not approved by the beginning of the government fiscal year, portions of the U.S. government can shut down or operate under a continuing resolution that maintains spending at prior-year levels, which can impact funding for our programs and timing of new awards. Second, the Congress typically appropriates funds on a fiscal-year basis, even though contract performance may extend over many years. Future revenue under existing multi-year contracts is conditioned on the continuing availability of congressional appropriations. Changes in appropriations in subsequent years may impact the funding available for these programs. Delays or changes in funding can impact the timing of available funds or lead to changes in program content.

Government contracts are subject to termination rights by the customer. U.S. government contracts generally permit the government to terminate a contract, in whole or in part, for convenience. If a contract is terminated for convenience, a contractor usually is entitled to receive payments for its allowable costs incurred and the proportionate share of fees or earnings for the work performed. The government may also terminate a contract for default in the event of a breach by the contractor. If a contract is terminated for default, the government in most cases pays only for the work it has accepted. Many foreign contracts have similar termination rights by customers. The termination of multiple or large programs could have a material adverse effect on our future revenue and earnings.

Government contractors operate in a highly regulated environment and are subject to audit by the U.S. government. Numerous U.S. government agencies routinely audit and review government contractors. These agencies review a contractor's performance under its contracts and compliance with applicable laws, regulations and standards. The U.S. government also reviews the adequacy of, and compliance with, internal control systems and policies, including the contractor's purchasing, property, estimating, material, earned value management and accounting systems. In some cases, audits may result in delayed payments or contractor costs not being reimbursed or subject to repayment. If an audit or investigation were to result in allegations against a contractor of improper or illegal activities, civil or criminal penalties and administrative sanctions could result, including termination of contracts, forfeiture of profits, suspension of payments, fines and suspension or prohibition from doing business with the U.S. government. In addition, reputational harm could result if allegations of impropriety were made. In some cases, audits may result in disputes with the respective government agency that can result in negotiated settlements, arbitration or litigation. Moreover, new laws, regulations or standards, or changes to existing ones, can increase our performance and compliance costs and reduce our revenue and earnings.

Our Aerospace segment is subject to changing customer demand for business aircraft. The business jet market is driven by the demand for business-aviation products and services by corporate, individual and government customers in the United States and around the world. The Aerospace segment's results also depend on other factors, including general economic conditions, the availability

and cost of credit, pricing pressures and trends in capital goods markets. In addition, if customers default on existing contracts and the contracts are not replaced, the segment's anticipated revenue and profitability could be reduced materially.

Earnings and margin depend on our ability to perform on our contracts. When agreeing to contractual terms, our management team makes assumptions and projections about future conditions and events. The accounting for our contracts requires assumptions and estimates about these conditions and events. These projections and estimates assess, among other things:

- the productivity and availability of labor;
- the complexity of the work to be performed;
- the cost and availability of materials and components; and
- schedule requirements.

If there is a significant change in one or more of these circumstances, estimates or assumptions, or if the risks under our contracts are not managed adequately, the profitability of contracts could be adversely affected. This could affect earnings and margin materially.

Revenue, earnings and margin depend in part on supplier performance. We rely on other companies and our government customers to provide materials, components and subsystems for our products. Suppliers, including subcontractors, sometimes perform some of the services that we provide to our customers. We depend on these suppliers and government entities to meet our contractual obligations in full compliance with customer requirements and applicable law. Misconduct by suppliers, such as a failure to comply with procurement regulations or engaging in unauthorized activities, may harm our future revenue, earnings and margin.

We sometimes rely on only one or two sources of supply, and any disruption in our supply chain could have an adverse effect on our ability to meet our customer commitments. For example, some of our operating segments rely on the supply of semiconductors for the manufacture of our products, and any inability of or delay by our suppliers to meet our order demands (including due to the suppliers' competing commercial priorities, any military conflict resulting in a disruption of manufacturing or trade relations, or any other business disruption) could delay or disrupt our ability to procure semiconductors. Our ability to perform our obligations to our customers, and our future revenue, earnings and margin, may be materially adversely affected if (1) any one or more of our suppliers is unable to provide the agreed-upon materials, or perform the agreed-upon services in a timely and cost-effective manner, or engages in misconduct or other improper activities or (2) we are unable to otherwise obtain necessary materials, components, subsystems or services in a timely and cost-effective manner.

Our success depends in part on our ability to develop new products and technologies and maintain a qualified workforce to meet the needs of our customers. Many of the products and services we provide involve sophisticated technologies and engineering, with related complex manufacturing and system-integration processes. Our customers' requirements change and evolve regularly. Accordingly, our performance depends in part on our ability to continue to develop, manufacture and provide innovative products and services and bring those offerings to market quickly at cost-effective prices. Many of our new products must meet extensive and time-consuming regulatory requirements that are often outside our control and may result in unanticipated delays. Additionally, due to the highly specialized nature of our business, we must hire and retain the skilled and qualified personnel necessary to perform the services required by our customers and to develop and manufacture our products. To the extent that the demand for skilled personnel exceeds supply, we could experience higher labor, recruiting or training costs in order to attract and retain such employees. If we were unable

to develop new products that meet customers' changing needs and satisfy regulatory requirements in a timely manner or successfully attract and retain qualified personnel, our future revenue and earnings may be materially adversely affected.

Risks Relating to Our International Operations

Operations outside the United States are subject to various risks that may be associated with doing business in foreign countries. In some countries there is increased chance for economic, legal or political instability, and procurement procedures may be less robust or mature, which may complicate the contracting process. Our non-U.S. operations may be sensitive to and impacted by (1) changes in a foreign government's national policies and priorities, political leadership and budgets, which may be influenced by changes in threat environments, geopolitical uncertainties, volatility in economic conditions and other economic and political factors including inflationary pressures; (2) changes in U.S., foreign, and international laws, regulations, and policies; (3) energy, natural resource and other commodity shortages; and (4) global trade disputes and supply chain disruptions. For example, the ongoing conflict between Russia and Ukraine has resulted in the imposition of numerous economic and trade sanctions, export controls, and other restrictions targeting Russia and Belarus, and the Russian government has implemented counter-sanctions and export controls targeting the U.S. and various foreign countries in which we operate. These actions have caused some economic disruptions around the world and have exacerbated global supply chain challenges. Changes and developments in any of these matters or factors may occur suddenly and could impact funding for programs or delay purchasing decisions or customer payments.

Non-U.S. transactions can involve increased risks arising from foreign exchange rate variability, which could, among other things, negatively impact sales and the translation of our international revenue from local currencies into U.S. dollars, and differing legal systems. Our non-U.S. operations are subject to U.S. and foreign laws and regulations, including laws and regulations relating to import-export controls, technology transfers, the Foreign Corrupt Practices Act (FCPA) and other anti-corruption laws, and the International Traffic in Arms Regulations (ITAR). An unfavorable event or trend in any one or more of these factors or a failure to comply with U.S. or foreign laws could result in administrative, civil or criminal liabilities, including suspension or debarment from government contracts or suspension of our export privileges, and could materially adversely affect revenue and earnings.

In addition, some non-U.S. government customers require contractors to enter into letters of credit, performance or surety bonds, bank guarantees and other similar financial arrangements. We may also be required to agree to specific in-country purchases, manufacturing agreements or financial support arrangements, known as offsets, that require us to satisfy investment or other commitments or face penalties. Offset requirements may extend over several years and could require us to team with local companies to fulfill these commitments. If we do not satisfy these financial or offset requirements, our future revenue and earnings may be materially adversely affected.

Risks Relating to Our Acquisitions and Similar Investment Activities

We have made and expect to continue to make investments, including acquisitions and joint ventures, that involve risks and uncertainties. When evaluating potential acquisitions and joint ventures, we make judgments regarding the value of business opportunities, technologies and other assets, and the risks and costs of potential liabilities based on information available to us at the time of the transaction. Whether we realize the anticipated benefits from these transactions depends on multiple factors, including our integration of the businesses involved; the performance of the underlying products, capabilities, or technologies; market conditions following the acquisition; and acquired

liabilities, including some that may not have been identified prior to the acquisition. These factors could materially adversely affect our financial results.

Changes in business conditions may cause goodwill and other intangible assets to become impaired. Goodwill represents the purchase price paid in excess of the fair value of net tangible and intangible assets acquired in a business combination. Goodwill is not amortized and remains on our balance sheet indefinitely unless there is an impairment or a sale of a portion of the business. We review goodwill for impairment annually at each of our reporting units or when circumstances indicate that the likelihood of an impairment is greater than 50%. Such circumstances include a significant adverse change in the business climate for one of our reporting units or a decision to dispose of a reporting unit or a significant portion of a reporting unit. We face some uncertainty in our business environment due to a variety of challenges, including the risk factors discussed in this section. We may experience unforeseen circumstances that adversely affect the value of our goodwill or intangible assets. Future write-offs of goodwill or other intangible assets as a result of an impairment in the business could materially adversely affect our results of operations and financial condition.

Other Business and Operational Risks

Our business could be negatively impacted by cybersecurity events and other disruptions. We face various cybersecurity threats, including threats to our IT infrastructure and attempts to gain unauthorized access to our proprietary or classified information, denial-of-service attacks, as well as threats to the physical security of our facilities and employees, and threats from terrorist acts. We also design and manage IT systems and products for various customers. We generally face the same security threats for these systems and products as for our own internal systems. In addition, we face cyber threats from entities and persons that may seek to target us through our customers, suppliers and other third parties with whom we do business. Many of these cybersecurity threats are increasingly sophisticated and constantly evolving. Accordingly, we maintain information security staff, policies and procedures for managing risk to our information systems, and we review and update our policies, procedures and practices in light of evolving threats. We conduct employee training on cybersecurity to mitigate persistent and continuously evolving cybersecurity threats, and we report cybersecurity events or losses of customer data to affected customers and applicable regulatory authorities. However, there can be no assurance that any such actions, including the timeliness of our efforts to review, update or implement policies, procedures and practices in light of evolving threats, or the safeguards put in place by our customers, suppliers and other parties on which we rely, will be sufficient to detect, prevent and mitigate cybersecurity breaches or disruptions, or the unauthorized release of sensitive information or corruption of data.

We have experienced cybersecurity events and disruptions such as viruses and attacks targeting our IT systems. Such prior events have not had a material impact on our financial condition, results of operations or liquidity. However, future threats could have a materially adverse impact on our company by, among other things, causing harm to our business, results of operations or reputation; disrupting our operations; exposing us to potential liability, regulatory actions and loss of business; and challenging our eligibility for future work on sensitive or classified systems for government customers. Due to the evolving nature of these security threats, the potential impact of any future incident cannot be predicted. Our insurance coverage may not be adequate to cover all the costs related to cybersecurity attacks or disruptions resulting from such events.

Our business may continue to be negatively impacted by the coronavirus (COVID-19) pandemic and could be negatively impacted by other pandemics and outbreaks. The COVID-19 pandemic has had, and could continue to have, a negative effect on our business, results of operations

and financial condition. This includes disruptions or restrictions on our employees' ability to work effectively, temporary closures of our facilities and the facilities of our customers, and supply-chain disruptions. Any such effects could materially adversely affect our ability to perform on our contracts. In addition, the U.S. government's federal contractor vaccine mandate, if enforced, could adversely affect our ability, and our subcontractors' ability, to hire and retain highly skilled employees to work on U.S. government programs. Any cost increases that result from these effects may not be fully recoverable on our contracts or adequately covered by insurance.

In addition, the COVID-19 pandemic has resulted in a widespread health crisis that is adversely affecting the economies and financial markets of many countries, which could result in a prolonged economic downturn that may negatively affect demand for our products and services. The imposition of quarantine and travel restrictions has negatively affected and, if reimposed, may continue to negatively affect portions of our business. The extent to which COVID-19 continues to impact our business, results of operations and financial condition is highly uncertain and will depend on future developments. Such developments may include the geographic spread and duration of the virus, including the emergence of new variants, the severity of the disease, vaccination rates and the actions that may be taken by various governmental authorities and other third parties in response to the pandemic. Other outbreaks of contagious diseases, or other adverse public health developments in countries where we operate or our customers are located, could similarly adversely affect our business, results of operations and financial condition in the future.

Global climate change could negatively affect our business. Increased public awareness and concern regarding global climate change may result in state, federal or international requirements to reduce or mitigate global warming, such as the imposition of carbon pricing mechanisms, stricter limits on greenhouse gas emissions, or other business restrictions or compliance requirements regarding reducing or mitigating global climate change. If environmental or climate-change laws or regulations are adopted or changed that directly or indirectly impose significant new costs, operational restrictions or compliance requirements on our business, products, customers or suppliers, they could increase our costs, require additional capital expenditures, reduce our margins and adversely affect our business, results of operations and financial condition.

Further, while we continuously evaluate the evolving landscape of environmental-related legislation and seek opportunities for continuous improvement of our existing climate-related measures, as well as new ways to minimize our impact on the planet, there can be no assurance that changes in customer demand patterns and competition driven by climate change, as well as potential climate-related reputational risks will not adversely affect our business, results of operations and financial condition.

FORWARD-LOOKING STATEMENTS

This annual report on Form 10-K contains forward-looking statements that are based on management's expectations, estimates, projections and assumptions. Words such as "expects," "anticipates," "plans," "believes," "forecasts," "scheduled," "outlook," "estimates," "should" and variations of these words and similar expressions are intended to identify forward-looking statements. Examples include projections of revenue, earnings, operating margin, segment performance, cash flows, contract awards, aircraft production, deliveries and backlog. In making these statements, we rely on assumptions and analyses based on our experience and perception of historical trends, current conditions and expected future developments as well as other factors we consider appropriate under the circumstances. We believe our estimates and judgments are reasonable based on information available to us at the time. Forward-looking statements are made pursuant to the safe harbor provisions of the Private Securities Litigation

Reform Act of 1995, as amended. These statements are not guarantees of future performance and involve risks and uncertainties that are difficult to predict. Therefore, actual future results and trends may differ materially from what is forecast in forward-looking statements due to a variety of factors, including the risk factors discussed in this Form 10-K.

All forward-looking statements speak only as of the date of this report or, in the case of any document incorporated by reference, the date of that document. All subsequent written and oral forward-looking statements attributable to General Dynamics or any person acting on our behalf are qualified by the cautionary statements in this section. We do not undertake any obligation to update or publicly release revisions to any forward-looking statements to reflect events, circumstances or changes in expectations after the date of this report. These factors may be revised or supplemented in future filings with the SEC.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

We operate in a number of offices, manufacturing plants, laboratories, warehouses and other facilities in the United States and abroad. We believe our facilities are adequate for our present needs and, given planned improvements and construction, expect them to remain adequate for the foreseeable future.

On December 31, 2022, our segments had material operations at the following locations:

- **Aerospace** – Mesa, Arizona; Van Nuys, California; West Palm Beach, Florida; Brunswick and Savannah, Georgia; Cahokia, Illinois; Westfield, Massachusetts; Teterboro, New Jersey; New York, New York; Tulsa, Oklahoma; Dallas and Fort Worth, Texas; Dulles, Virginia; Appleton, Wisconsin; Sydney, Australia; Beijing, China; Mexicali, Mexico; Singapore; Basel, Switzerland; Farnborough, United Kingdom.
- **Marine Systems** – San Diego, California; Groton and New London, Connecticut; Jacksonville, Florida; Honolulu, Hawaii; Bath and Brunswick, Maine; Middletown and North Kingstown, Rhode Island; Norfolk and Portsmouth, Virginia; Bremerton, Washington; Mexicali, Mexico.
- **Combat Systems** – Anniston, Alabama; East Camden, Arkansas; Healdsburg, California; Crawfordsville, St. Petersburg and Tallahassee, Florida; Marion, Illinois; Saco, Maine; Sterling Heights, Michigan; Lima, Ohio; Eynon, Scranton and Wilkes-Barre, Pennsylvania; Garland, Texas; Joint Base Lewis-McChord, Washington; Vienna, Austria; Le Gardeur, London and Valleyfield, Canada; Kaiserslautern, Germany; Madrid, Sevilla and Trubia, Spain; Kreuzlingen and Tägerwilen, Switzerland; Merthyr Tydfil, United Kingdom.
- **Technologies** – Daleville, Alabama; Scottsdale, Arizona; Orlando, Florida; Bossier City, Louisiana; Annapolis Junction, Maryland; Dedham, Pittsfield and Taunton, Massachusetts; Bloomington, Minnesota; Rensselaer, New York; Greensboro, North Carolina; Chesapeake and Marion, Virginia; multiple locations in Northern Virginia; Ottawa, Canada; Oakdale and St. Leonards, United Kingdom.

A summary of floor space by segment on December 31, 2022, follows:

(Square feet in millions)	Company- owned Facilities	Leased Facilities	Government- owned Facilities	Total
Aerospace	5.9	9.4	0.5	15.8
Marine Systems	8.7	4.5	—	13.2
Combat Systems	6.5	4.7	4.9	16.1
Technologies	3.1	7.9	0.9	11.9
Total square feet	24.2	26.5	6.3	57.0

ITEM 3. LEGAL PROCEEDINGS

For information relating to legal proceedings, see Note M to the Consolidated Financial Statements in Item 8.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

INFORMATION ABOUT OUR EXECUTIVE OFFICERS

All of our executive officers are appointed annually. None of our executive officers were selected pursuant to any arrangement or understanding between the officer and any other person. Set forth below is information regarding our executive officers as of February 7, 2023 (references are to positions with General Dynamics Corporation, unless otherwise noted):

Name, Position and Office	Age
Jason W. Aiken – Executive Vice President, Technologies and Chief Financial Officer since January 2023; Senior Vice President and Chief Financial Officer, January 2014 - December 2022; Vice President of the company and Chief Financial Officer of Gulfstream Aerospace Corporation, September 2011 - December 2013; Vice President and Controller, April 2010 - August 2011; Staff Vice President, Accounting, July 2006 - March 2010	50
Christopher J. Brady – Vice President of the company and President of General Dynamics Mission Systems since January 2019; Vice President, Engineering of General Dynamics Mission Systems, January 2015 - December 2018; Vice President, Engineering of General Dynamics C4 Systems, May 2013 - December 2014; Vice President, Assured Communications Systems of General Dynamics C4 Systems, August 2004 - May 2013	60
Mark L. Burns – Vice President of the company and President of Gulfstream Aerospace Corporation since July 2015; Vice President of the company since February 2014; President, Product Support of Gulfstream Aerospace Corporation, June 2008 - June 2015	63
Danny Deep – Vice President of the company and President of General Dynamics Land Systems since April 2020; Chief Operating Officer of General Dynamics Land Systems, September 2018 - April 2020; Vice President of General Dynamics Land Systems – Canada, January 2011 - September 2018	53

Gregory S. Gallopoulos – Senior Vice President, General Counsel and Secretary since January 2010; Vice President and Deputy General Counsel, July 2008 - January 2010; Managing Partner of Jenner & Block LLP, January 2005 - June 2008	63
M. Amy Gilliland – Senior Vice President of the company since April 2015; President of General Dynamics Information Technology since September 2017; Deputy for Operations of General Dynamics Information Technology, April 2017 - September 2017; Senior Vice President, Human Resources and Administration, April 2015 - March 2017; Vice President, Human Resources, February 2014 - March 2015; Staff Vice President, Strategic Planning, January 2013 - February 2014; Staff Vice President, Investor Relations, June 2008 - January 2013	48
Kevin M. Graney – Vice President of the company and President of Electric Boat Corporation since October 2019; Vice President of the company and President of NASSCO, January 2017 - October 2019; Vice President and General Manager of NASSCO, November 2013 - January 2017	59
Kimberly A. Kuryea – Senior Vice President, Human Resources and Administration since April 2017; Vice President and Controller, September 2011 - March 2017; Chief Financial Officer of General Dynamics Advanced Information Systems, November 2007 - August 2011; Staff Vice President, Internal Audit, March 2004 - October 2007	55
William A. Moss – Vice President and Controller since April 2017; Staff Vice President, Internal Audit, May 2015 - March 2017; Staff Vice President, Accounting, August 2010 - May 2015	59
Phebe N. Novakovic – Chairman and Chief Executive Officer since January 2013; President and Chief Operating Officer, May 2012 - December 2012; Executive Vice President, Marine Systems, May 2010 - May 2012; Senior Vice President, Planning and Development, July 2005 - May 2010; Vice President, Strategic Planning, October 2002 - July 2005	65
Mark C. Roualet – Executive Vice President, Combat Systems, since March 2013; Vice President of the company and President of General Dynamics Land Systems, October 2008 - March 2013; Senior Vice President and Chief Operating Officer of General Dynamics Land Systems, July 2007 - October 2008	64
Robert E. Smith – Executive Vice President, Marine Systems, since July 2019; Vice President of the company and President of Jet Aviation, January 2014 - July 2019; Vice President and Chief Financial Officer of Jet Aviation, July 2012 - January 2014	55

PART II

ITEM 5. MARKET FOR THE COMPANY’S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

Our common stock is listed on the New York Stock Exchange under the trading symbol “GD.”

On January 29, 2023, there were approximately 9,000 holders of record of our common stock.

For information regarding securities authorized for issuance under our equity compensation plans, see Note R to the Consolidated Financial Statements contained in Item 8.

We did not make any unregistered sales of equity securities in 2022.

The following table provides information about our fourth-quarter purchases of equity securities that are registered pursuant to Section 12 of the Securities Exchange Act of 1934, as amended:

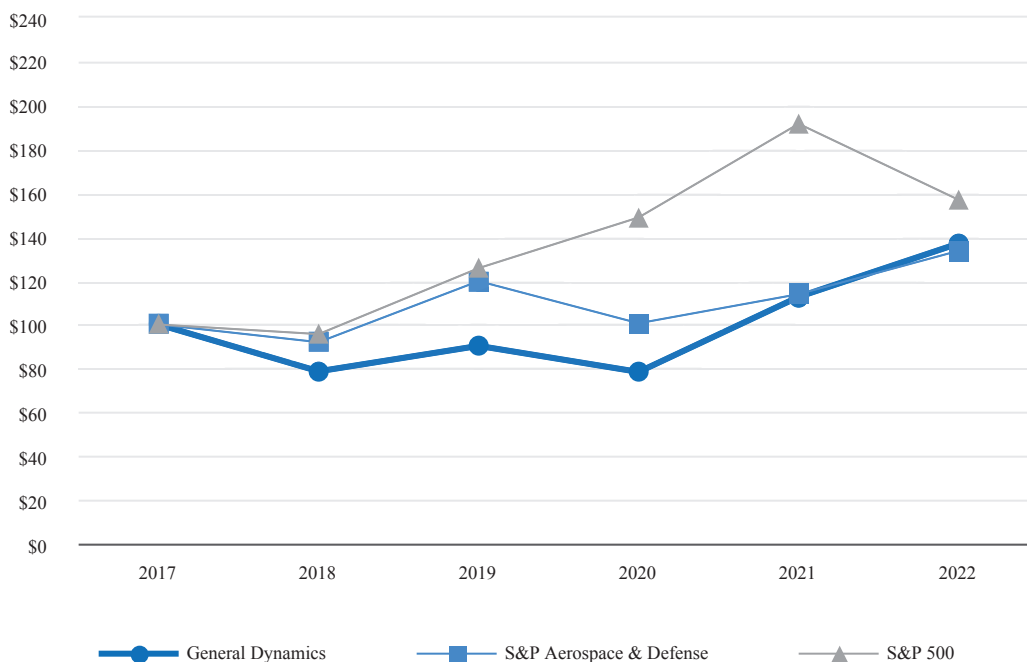
Period	Total Number of Shares	Average Price per Share	Total Number of Shares Purchased as Part of Publicly Announced Program	Maximum Number of Shares That May Yet Be Purchased Under the Program
<i>Shares Purchased Pursuant to Share Buyback Program</i>				
10/3/22-10/30/22	—	\$ —	—	7,150,564
10/31/22-11/27/22	441,286	249.14	441,286	6,709,278
11/28/22-12/31/22	—	—	—	6,709,278
<i>Shares Delivered or Withheld Pursuant to Restricted Stock Vesting*</i>				
10/3/22-10/30/22	776	213.77		
10/31/22-11/27/22	498	249.13		
11/28/22-12/31/22	728	253.72		
	<u>443,288</u>	\$ 249.09		

* Represents shares withheld by, or delivered to, us pursuant to provisions in agreements with recipients of restricted stock granted under our equity compensation plans that allow us to withhold, or the recipient to deliver to us, the number of shares with a fair value equal to the statutory tax withholding due upon vesting of the restricted shares.

On December 31, 2022, 6.7 million shares remained authorized by our board of directors for repurchase. For additional information relating to our purchases of common stock during the past three years, see Note N to the Consolidated Financial Statements in Item 8.

The following performance graph compares the cumulative total return to shareholders on our common stock, assuming reinvestment of dividends, with similar returns for the Standard & Poor's 500 Index and the Standard & Poor's Aerospace & Defense Index, both of which include General Dynamics.

Cumulative Total Return
Based on Investments of \$100 Beginning December 31, 2017
(Assumes Reinvestment of Dividends)
(in per-share amounts)



ITEM 6. [RESERVED]

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

(Dollars in millions, except per-share amounts or unless otherwise noted)

For an overview of our operating segments, including a discussion of our major products and services, see the Business discussion contained in Item 1. The following discussion of our financial condition and results of operations for 2022 compared with 2021 should be read in conjunction with our Consolidated Financial Statements included in Item 8, while a discussion of 2021 compared with 2020 can be found in Item 7 of our annual report on Form 10-K for the year ended December 31, 2021.

BUSINESS ENVIRONMENT

GLOBAL EVENTS

The coronavirus (COVID-19) pandemic has caused significant disruptions to national and global economies and government activities since March 2020. During this time, we have continued to conduct our operations while responding to the pandemic with actions to mitigate adverse consequences to our employees, business, supply chain and customers.

In February 2022, Russian forces invaded Ukraine. In response, the United States and several other countries imposed economic and trade sanctions, export controls and other restrictions (collectively, global sanctions) targeting Russia and Belarus. The conflict and these sanctions have caused some disruptions to global economies and some global businesses, including heightened cybersecurity risks, increased energy costs and foreign currency exchange rate fluctuations, as well as exacerbated existing supply chain challenges and inflationary pressures.

In our Aerospace segment, we continue to see strong order activity as we emerge from the impacts of the COVID-19 pandemic. However, this segment is the most impacted relatively by the global sanctions, particularly our aircraft services business in Europe, which we have offset to date through additional services revenue in other regions. Across the aerospace industry, the global sanctions impact sales to certain individuals and entities and exports of associated aircraft parts and related services.

Within our defense segments, the COVID-19 pandemic created some staffing and supply chain challenges, particularly in our Marine Systems (especially in the submarine supply chain) and Technologies segments. The Russia-Ukraine conflict could continue to impact future U.S. government defense spending due to the heightened national security threat and the need to replenish stockpiles that have been reduced in support of Ukraine. Internationally, many countries in the region have expressed a renewed commitment to defense-related spending. As a result, we have seen signals of additional demand for our products and services.

Any longer-term impact of these global events to our business is currently unknown due to the uncertainty around duration and their broader impact. For additional information, see the Risk Factors in Part I, Item 1A. The Review of Operating Segments includes information on these global events for the affected segments.

OUR MARKETS

With approximately 70% of our revenue from the U.S. government, government spending levels — particularly defense spending — influence our financial performance. On December 29, 2022, the fiscal

year (FY) 2023 defense appropriations bill was signed into law. It totaled approximately \$798 billion, representing an increase of approximately 10% over the enacted FY 2022 spending level.

The long-term outlook for our U.S. defense business is influenced by the U.S. military's funding priorities, the diversity of our programs and customers, our insight into customer requirements stemming from our incumbency on core programs, our ability to evolve our products to address a fast-changing threat environment and our proven track record of successful contract execution.

International demand for military equipment and technologies presents opportunities for our non-U.S. operations and exports from our North American businesses. While the revenue potential can be significant, there are risks to doing business in foreign countries, including changing budget priorities and overall spending pressures unique to each country.

In our Aerospace segment, we expect our investment in the development of new aircraft products and technologies to support the segment's long-term growth. Similarly, we believe the aircraft services business will be a source of steady revenue growth as the global business jet fleet continues to grow.

RESULTS OF OPERATIONS

INTRODUCTION

The following paragraphs explain how we recognize revenue and operating costs in our operating segments and the terminology we use to describe our operating results.

In the Aerospace segment, we record revenue on contracts for new aircraft when the customer obtains control of the asset, which is generally upon delivery and acceptance by the customer of the fully outfitted aircraft. Revenue associated with the segment's services businesses is recognized as work progresses or upon delivery of services. Fluctuations in revenue from period to period result from the number and mix of new aircraft deliveries, and the level and type of aircraft services performed during the period.

The majority of the Aerospace segment's operating costs relates to new aircraft production on firm orders and consists of labor, material, subcontractor and overhead costs. The costs are accumulated in production lots, recorded in inventory and recognized as operating costs at aircraft delivery based on the estimated average unit cost in a production lot. While changes in the estimated average unit cost for a production lot impact the level of operating costs, the amount of operating costs reported in a given period is based largely on the number and type of aircraft delivered. Operating costs in the Aerospace segment's services businesses are recognized generally as incurred.

For new aircraft, operating earnings and margin are a function of the prices of our aircraft, our operational efficiency in manufacturing and outfitting the aircraft, and the mix of ultra-large-cabin, large-cabin and mid-cabin aircraft deliveries. Aircraft mix can also refer to the stage of program maturity for our aircraft models. A new aircraft model typically has lower margins in its initial production lots, and then margins generally increase as we realize efficiencies in the production process. Additional factors affecting the segment's earnings and margin include the volume, mix and profitability of services work performed, the market for pre-owned aircraft, and the level of general and administrative (G&A) and net research and development (R&D) costs incurred by the segment.

In the defense segments, revenue on long-term government contracts is recognized generally over time as the work progresses, either as products are produced or as services are rendered. Typically, revenue is recognized over time using costs incurred to date relative to total estimated costs at

completion to measure progress toward satisfying our performance obligations. Incurred costs represent work performed, which corresponds with, and thereby best depicts, the transfer of control to the customer. Contract costs include labor, material, overhead and, when appropriate, G&A expenses. Variances in costs recognized from period to period reflect primarily increases and decreases in production or activity levels on individual contracts. Because costs are used as a measure of progress, year-over-year variances in costs result in corresponding variances in revenue, which we generally refer to as volume.

Operating earnings and margin in the defense segments are driven by changes in volume, performance or contract mix. Performance refers to changes in profitability based on adjustments to estimates at completion on individual contracts. These adjustments result from increases or decreases to the estimated value of the contract, the estimated costs to complete the contract or both. Therefore, changes in costs incurred in the period compared with prior periods do not necessarily impact profitability. It is only when total estimated costs at completion on a given contract change without a corresponding change in the contract value (or vice versa) that the profitability of that contract may be impacted. Contract mix refers to changes in the volume of higher- versus lower-margin work. Higher or lower margins can result from a number of factors, including contract type (e.g., fixed-price/cost-reimbursable) and type of work (e.g., development/production). Contract mix can also refer to the stage of program maturity for our long-term production contracts. New long-term production contracts typically have lower margins initially, and then margins generally increase as we achieve learning curve improvements or realize other cost reductions.

CONSOLIDATED OVERVIEW

2022 IN REVIEW

- Strong operating performance:
 - Record-high revenue of \$39.4 billion, an increase of 2.4% from 2021
 - Operating earnings of \$4.2 billion with sequential growth throughout the year
 - Record-high diluted earnings per share of \$12.19, up 5.5% from 2021
 - Record-high cash provided by operating activities of \$4.6 billion, or 135% of net earnings
- Record-high backlog of \$91.1 billion increased \$3.5 billion, or 4%, from 2021, driven by significant order activity during the year supporting our long-term growth expectations:
 - Outstanding Gulfstream aircraft order activity, including orders across all aircraft models
 - Several significant contract awards received in our defense segments, including \$5.4 billion of combined awards from the U.S. Navy for advance procurement and other work for the Columbia-class submarine program

Year Ended December 31	2022	2021	Variance	
Revenue	\$ 39,407	\$ 38,469	\$ 938	2.4%
Operating costs and expenses	(35,196)	(34,306)	(890)	2.6%
Operating earnings	4,211	4,163	48	1.2%
Operating margin	10.7%	10.8%		

Our consolidated revenue increased in 2022 from growth in U.S. Navy ship construction in our Marine Systems segment and aircraft services activity in our Aerospace segment. Operating earnings increased

in 2022 due primarily to strong operating performance in our Aerospace segment, while we managed through the impacts of supply chain challenges and inflationary pressure across the business.

REVIEW OF OPERATING SEGMENTS

Following is a discussion of operating results and outlook for each of our operating segments. For the Aerospace segment, results are analyzed by specific types of products and services, consistent with how the segment is managed. For the defense segments, the discussion is based on markets and the lines of products and services offered with a supplemental discussion of specific contracts and programs when significant to the results. Additional information regarding our segments can be found in Note O to the Consolidated Financial Statements in Item 8.

AEROSPACE

Year Ended December 31	2022	2021	Variance	
Revenue	\$ 8,567	\$ 8,135	\$ 432	5.3%
Operating earnings	1,130	1,031	99	9.6%
Operating margin	13.2%	12.7%		
Gulfstream aircraft deliveries (in units)	120	119	1	0.8%

Operating Results

The increase in the Aerospace segment's revenue in 2022 consisted of the following:

Aircraft services	\$ 420
Aircraft manufacturing	12
Total increase	\$ 432

Revenue was up in our Aerospace segment driven by an increase in demand for aircraft services, particularly maintenance work, and increased activity at our fixed-base operator (FBO) facilities due to growing global air travel.

The increase in the segment's operating earnings in 2022 consisted of the following:

Aircraft manufacturing	\$ 123
Aircraft services	89
G&A/other expenses	(113)
Total increase	\$ 99

Aircraft manufacturing operating earnings were up in 2022 due to a favorable mix of aircraft deliveries and ongoing improvements in manufacturing efficiency. Earnings in 2022 were somewhat impacted by customer accommodations associated with a G500/G600 airworthiness directive while 2021 earnings included mark-to-market adjustments related to aircraft that were in the G500 test program. In 2022, operating earnings from aircraft services were up due to higher volume and favorable cost performance. These increases were offset partially by higher G&A/other expenses due primarily to increased R&D expenses associated with ongoing product development efforts. In total, the Aerospace segment's operating margin increased 50 basis points in 2022 to 13.2%.

2023 Outlook

We expect the Aerospace segment's 2023 revenue to increase to approximately \$10.4 billion due to an increase in new aircraft deliveries to 145. We expect the segment's operating margin to be approximately 14.6%. This outlook assumes the certification and entry into service of the new G700 aircraft.

MARINE SYSTEMS

Year Ended December 31	2022	2021	Variance	
Revenue	\$ 11,040	\$ 10,526	\$ 514	4.9%
Operating earnings	897	874	23	2.6%
Operating margin	8.1%	8.3%		

Operating Results

The increase in the Marine Systems segment's revenue in 2022 consisted of the following:

U.S. Navy ship construction	\$ 577
U.S. Navy ship engineering, repair and other services	(63)
Total increase	\$ 514

Revenue from U.S. Navy ship construction was up across our shipyards in 2022 due to increased volume on the Columbia-class submarine program, the John Lewis-class (T-AO-205) fleet replenishment oiler program and the Arleigh Burke-class (DDG-51) destroyer program. These increases were offset partially by lower submarine engineering volume. Overall, the Marine Systems segment's operating margin decreased 20 basis points in 2022 due to program mix and supply chain impacts to the Virginia-class submarine schedule, offset partially by improved performance at NASSCO.

2023 Outlook

We expect the Marine Systems segment's 2023 revenue to remain steady at approximately \$10.9 billion. Operating margin is expected to be approximately 8.1% driven by program mix across our shipyards and ongoing supply chain challenges.

COMBAT SYSTEMS

Year Ended December 31	2022	2021	Variance	
Revenue	\$ 7,308	\$ 7,351	\$ (43)	(0.6)%
Operating earnings	1,075	1,067	8	0.7 %
Operating margin	14.7%	14.5%		

Operating Results

The change in the Combat Systems segment's revenue in 2022 consisted of the following:

International military vehicles	\$	(318)
U.S. military vehicles		282
Weapons systems and munitions		(7)
Total decrease	\$	(43)

Revenue from international military vehicles was down in 2022, but this decrease was offset largely by increased revenue from U.S. Stryker wheeled combat vehicles, particularly the maneuver short-range air defense (M-SHORAD) variant.

The strengthening of the U.S. dollar against the euro and British pound has negatively impacted the Combat Systems segment's results in 2022, specifically the translation of our international revenue from local currencies into U.S. dollars. Had foreign exchange rates in 2022 held constant from 2021, the Combat Systems segment's revenue would have increased 2.1% in 2022 compared to 2021.

The Combat Systems segment's operating margin increased 20 basis points compared with 2021 driven by favorable contract mix and strong operating performance.

2023 Outlook

We expect the Combat Systems segment's 2023 revenue to be approximately \$7.3 billion with operating margin of approximately 14.7%.

TECHNOLOGIES

Year Ended December 31	2022	2021	Variance	
Revenue	\$ 12,492	\$ 12,457	\$ 35	0.3 %
Operating earnings	1,227	1,275	(48)	(3.8)%
Operating margin	9.8%	10.2%		

Operating Results

The increase in the Technologies segment's revenue in 2022 consisted of the following:

IT services	\$	126
C5ISR* solutions		(91)
Total increase	\$	35

* Command, control, communications, computers, cyber, intelligence, surveillance and reconnaissance

The group's revenue was up despite continued delays in customer order activity as revenue from IT services increased on several programs, particularly with the group's federal civilian customers. This increase was offset partially by decreased revenue from C5ISR solutions due to supply chain disruptions. The Technologies segment's operating margin decreased 40 basis points compared with 2021 due primarily to the mix of service activity and product volume.

2023 Outlook

We expect the Technologies segment's 2023 revenue to be between \$12.5 and \$12.6 billion with operating margin of around 9.5% driven by a shift in the mix of IT service activity and hardware volume.

CORPORATE

Corporate operating costs totaled \$118 in 2022 and \$84 in 2021 and consisted primarily of equity-based compensation expense. The increase was due primarily to accelerated recognition of equity-based compensation expense. Corporate operating costs are expected to be approximately \$140 in 2023.

OTHER INFORMATION

PRODUCT AND SERVICE REVENUE AND OPERATING COSTS

Year Ended December 31	2022	2021	Variance	
Revenue:				
Products	\$ 23,022	\$ 22,428	\$ 594	2.6%
Services	16,385	16,041	344	2.1%
Operating Costs:				
Products	\$ (18,981)	\$ (18,524)	\$ (457)	2.5%
Services	(13,804)	(13,537)	(267)	2.0%

The increase in product revenue in 2022 consisted of the following:

Ship construction	\$ 577
Other, net	17
Total increase	\$ 594

Ship construction revenue increased due to higher volume on the Columbia-class submarine, T-AO-205 oiler and DDG-51 destroyer programs. In 2022, the primary driver of the increase in product operating costs was the change in volume described above.

The increase in service revenue in 2022 consisted of the following:

Aircraft services	\$ 420
Other, net	(76)
Total increase	\$ 344

Aircraft services revenue increased due to additional maintenance work and FBO activity. In 2022, the primary driver of the increase in service operating costs was the change in volume described above.

G&A EXPENSES

As a percentage of revenue, G&A expenses were 6.1% in 2022 and 5.8% in 2021, reflecting an increase in equity-based compensation expense. We expect G&A expenses as a percentage of revenue in 2023 to be generally consistent with 2022.

OTHER, NET

Net other income was \$189 in 2022 and \$134 in 2021 and represents primarily the non-service components of pension and other post-retirement benefits. In 2023, we expect net other income to decrease to approximately \$80 due to lower pension income. The decrease in pension income is driven primarily by higher interest rates and a change in investment mix in one of our plans due to its improved funded status.

INTEREST, NET

Net interest expense was \$364 in 2022 and \$424 in 2021, reflecting repayment of our scheduled debt maturities in 2021. See Note K to the Consolidated Financial Statements in Item 8 for additional information regarding our debt obligations, including interest rates. We expect 2023 net interest expense to be consistent with 2022.

PROVISION FOR INCOME TAX, NET

Our effective tax rate was 16% in 2022 and 15.9% in 2021. For further discussion, including a reconciliation of our effective tax rate from the statutory federal rate, see Note D to the Consolidated Financial Statements in Item 8. For 2023, we anticipate a slightly higher full-year effective tax rate of approximately 17% due to higher taxes on foreign earnings.

In August 2022, the president signed into law the Inflation Reduction Act of 2022, which contained provisions effective January 1, 2023, including a 15% corporate minimum tax and a 1% excise tax on stock buybacks, both of which we do not expect to have a material impact on our results of operations, financial condition or cash flows.

BACKLOG AND ESTIMATED POTENTIAL CONTRACT VALUE

Our total backlog, including funded and unfunded portions, was \$91.1 billion on December 31, 2022, up 4% from \$87.6 billion at the end of 2021. Our total backlog is equal to our remaining performance obligations under contracts with customers as discussed in Note B to the Consolidated Financial Statements in Item 8. Our total estimated contract value, which combines total backlog with estimated potential contract value, was \$127.7 billion on December 31, 2022.

The following table details the backlog and estimated potential contract value of each segment at the end of 2022 and 2021:

	Funded	Unfunded	Total Backlog	Estimated Potential Contract Value	Total Estimated Contract Value
December 31, 2022					
Aerospace	\$ 19,077	\$ 439	\$ 19,516	\$ 685	\$ 20,201
Marine Systems	26,246	19,453	45,699	3,672	49,371
Combat Systems	12,726	525	13,251	5,364	18,615
Technologies	9,100	3,571	12,671	26,889	39,560
Total	\$ 67,149	\$ 23,988	\$ 91,137	\$ 36,610	\$ 127,747
December 31, 2021					
Aerospace	\$ 15,878	\$ 415	\$ 16,293	\$ 1,657	\$ 17,950
Marine Systems	23,678	21,177	44,855	4,271	49,126
Combat Systems	12,584	509	13,093	6,936	20,029
Technologies	9,005	4,348	13,353	26,997	40,350
Total	\$ 61,145	\$ 26,449	\$ 87,594	\$ 39,861	\$ 127,455

For additional information about our major products and services in backlog see the Business discussion contained in Item 1.

AEROSPACE

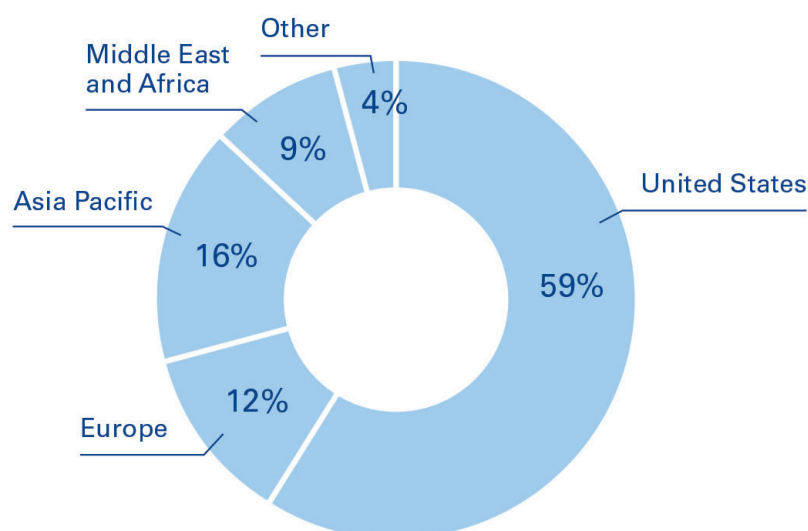
Aerospace funded backlog represents primarily new aircraft orders for which we have definitive purchase contracts and deposits from customers. Unfunded backlog consists of agreements to provide future aircraft maintenance and support services. The Aerospace segment ended 2022 with backlog of \$19.5 billion, up 19.8% from \$16.3 billion at year-end 2021.

Orders in 2022 reflected strong demand across our product and services portfolio, including orders for all models of Gulfstream aircraft. The segment's book-to-bill ratio (orders divided by revenue) was 1.5-to-1 in 2022.

Beyond total backlog, estimated potential contract value represents primarily options and other agreements with existing customers to purchase new aircraft and long-term aircraft services agreements. On December 31, 2022, estimated potential contract value in the Aerospace segment was \$685.

Demand for Gulfstream aircraft remains strong across customer types and geographic regions, generating orders from public and privately held companies, individuals, and governments around the world. Geographically, U.S. customers represented 70% of the segment's orders in 2022 and 59% of the segment's backlog on December 31, 2022, demonstrating continued strong domestic demand.

The following represents Gulfstream aircraft (in units) in backlog by region on December 31, 2022:



DEFENSE SEGMENTS

The total backlog in our defense segments represents the estimated remaining sales value of work to be performed under firm contracts. The funded portion of total backlog includes items that have been authorized and appropriated by the U.S. Congress and funded by customers, as well as commitments by international customers that are approved and funded similarly by their governments. The unfunded portion of total backlog includes the amounts we believe are likely to be funded, but there is no guarantee that future budgets and appropriations will provide the same funding level currently anticipated for a given program.

Estimated potential contract value in our defense segments includes unexercised options associated with existing firm contracts and unfunded work on indefinite delivery, indefinite quantity (IDIQ) contracts. Contract options represent agreements to perform additional work under existing contracts at the election of the customer. We recognize options in backlog when the customer exercises the option and establishes a firm order. For IDIQ contracts, we evaluate the amount of funding we expect to receive and include this amount in our estimated potential contract value. This amount is often less than the total IDIQ contract value, particularly when the contract has multiple awardees. The actual amount of funding received in the future may be higher or lower than our estimate of potential contract value.

Total backlog in our defense segments was \$71.6 billion on December 31, 2022, compared with \$71.3 billion at year-end 2021. In 2022, the total book-to-bill ratio in our defense segments was 1-to-1. Estimated potential contract value in our defense segments was \$35.9 billion on December 31, 2022, compared with \$38.2 billion at year-end 2021.

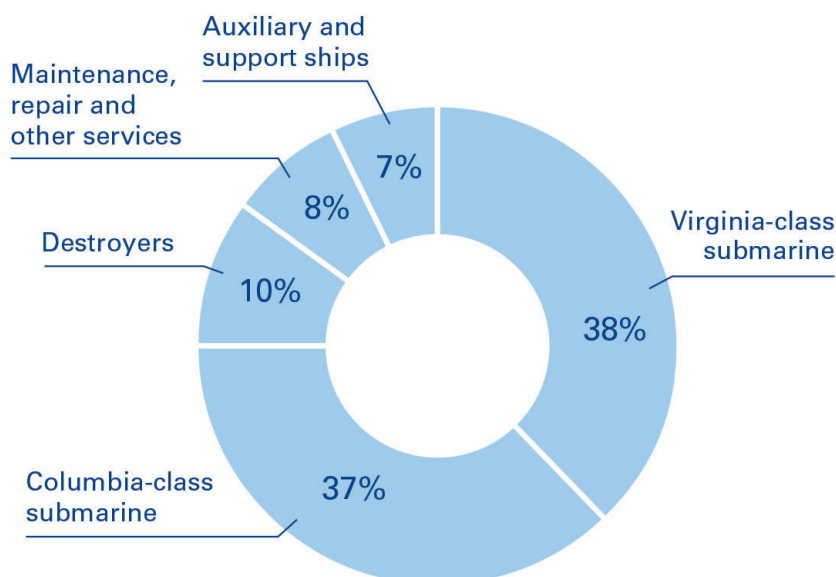
MARINE SYSTEMS

The Marine Systems segment's backlog consists of very long-term submarine and surface ship construction programs, as well as numerous engineering and repair contracts. The segment's book-to-bill ratio was 1.1-to-1 in 2022, resulting in backlog growth of 1.9% from year-end 2021 to \$45.7 billion. The segment's estimated potential contract value was \$3.7 billion on December 31, 2022, compared with \$4.3 billion at year-end 2021.

Significant contract awards in the Marine Systems segment during 2022 include:

- \$5.4 billion from the Navy for the Columbia-class submarine program for advance procurement and advance construction of critical components and material to support follow-on submarines, efforts to support continuous missile tube production, enhancements to develop the submarine industrial base, and sustained class maintenance and support. The awards also include options totaling \$585 of additional potential contract value.
- \$2 billion from the Navy for long-lead materials and construction of an additional Expeditionary Sea Base (ESB) auxiliary support ship and two additional T-AO-205 oilers. The awards also include a \$715 option for an additional T-AO-205 oiler.
- \$1.2 billion from the Navy to provide maintenance, modernization and repair services for the DDG-51 destroyer, Wasp-class amphibious assault ship and Los Angeles-class submarine programs.
- \$580 from the Navy for lead yard services, development studies and design efforts for Virginia-class submarines. The awards also include options totaling \$320 of additional potential contract value.
- \$235 from the Navy to provide engineering, technical, design and planning yard support services for operational strategic and attack submarines.
- \$170 from the Navy for advanced nuclear plant studies (ANPS) in support of the Columbia-class submarine program.
- \$145 from the Navy to provide ongoing planning and lead yard services for the DDG-51 destroyer program.

The following represents the Marine Systems segment's total estimated contract value by major program on December 31, 2022:



COMBAT SYSTEMS

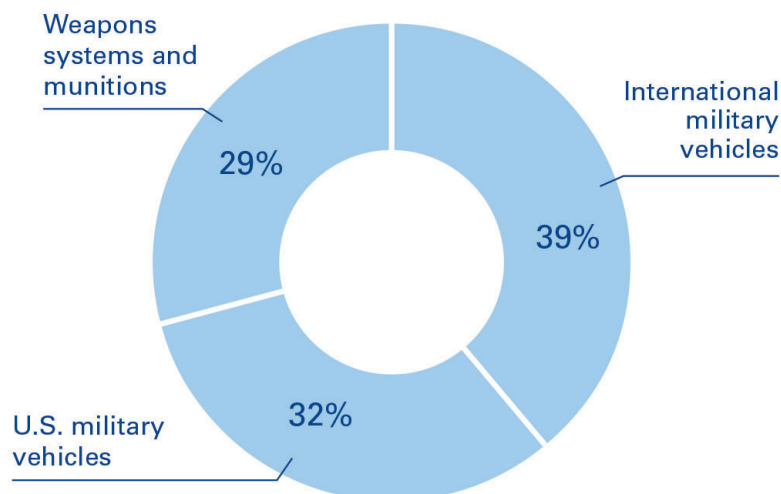
The Combat Systems segment's backlog consists of a mix of U.S. and international combat vehicles, weapons systems and munitions programs. The vehicle programs are generally long-term franchise programs, while the weapons systems and munitions programs tend to be shorter-term in nature. The segment's backlog was up from year-end 2021 to \$13.3 billion. The segment's estimated potential contract value was \$5.4 billion on December 31, 2022, compared with \$6.9 billion at year-end 2021.

Significant contract awards in the Combat Systems segment during 2022 include:

- \$1 billion for various munitions and ordnance with additional option value of \$465.
- \$410 from the U.S. Army to begin low-rate initial production (LRIP) of the Mobile Protected Firepower (MPF) vehicle. The contract has a maximum potential value of \$1.1 billion.
- A contract worth up to \$1.1 billion to produce Abrams main battle tanks in the system enhancement package version 3 (SE Pv3) configuration for Poland.
- \$770 from the Army for Abrams main battle tank upgrades, engineering and logistics support services, and system and sustainment technical support services.
- \$760 from the Army for Stryker vehicle upgrades, spare parts, and inventory management and support services.
- \$440 from the Army to produce Stryker M-SHORAD vehicles.
- \$355 to produce Abrams main battle tanks in the SE Pv3 configuration for Australia.
- \$320 to upgrade Ulan tracked vehicles for Austria.

- \$230 to produce Piranha armored combat vehicles for Switzerland.
- \$60 to produce M3 amphibious bridge systems for an international customer. The contract has a maximum potential value of \$210.

The following represents the Combat Systems segment's total estimated contract value by market on December 31, 2022:



TECHNOLOGIES

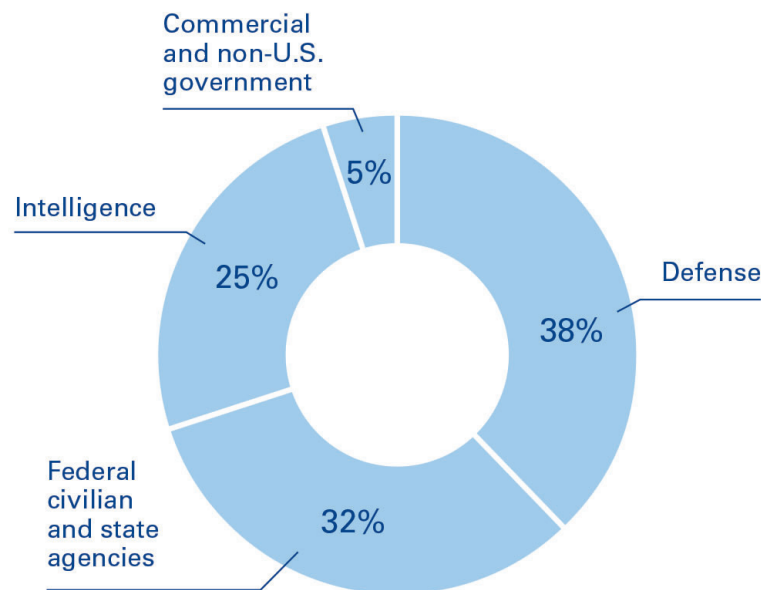
The Technologies segment's backlog consists of thousands of contracts and task orders across a mix of U.S. and non-U.S. government and commercial customers. These contracts can be shorter-cycle or span multiple years, but commonly include a small, initially funded order. Therefore, our estimated potential contract value of \$26.9 billion is an important indicator of future orders and revenue. In 2022, approximately 75% of the segment's orders were from additional work on IDIQ contracts or the exercise of options. The segment's total estimated contract value remained steady compared with year-end 2021.

Significant contract awards in the Technologies segment during 2022 include:

- An IDIQ contract from the National Geospatial-Intelligence Agency (NGA) to provide hybrid cloud services and IT design, engineering, and operations and sustainment services. The contract has a maximum potential value of \$4.5 billion over 10 years.
- \$1.6 billion for several key classified contracts.
- An IDIQ contract to provide IT infrastructure and modernization support services for the U.S. Air Forces in Europe under the Europe-Wide Information Technology and Enterprise Network (EITEN) program. The contract has a maximum potential value of \$910.
- \$80 from the U.S. Environmental Protection Agency for managed application, information, networking, enterprise and security services. The contract has a maximum potential value of \$660.

- An IDIQ contract from the Army to develop and field adversarial electronic warfare threat systems and capabilities in support of the Army's test and training communities. The contract has a maximum potential value of \$580.
- \$375 from the Army for computing and communications equipment under the Common Hardware Systems-5 (CHS-5) program.
- \$160 from the U.S. Space Development Agency to build and operate ground systems for the new low-earth orbit (LEO) satellite network. The contract has a maximum potential value of \$325.
- An IDIQ contract for the development and sustainment of applications and websites for the Administrative Office of the United States Courts (AOUSC). The contract has a maximum potential value of \$300.

The following represents the Technologies segment's total estimated contract value by customer on December 31, 2022:



LIQUIDITY AND CAPITAL RESOURCES

We place a strong emphasis on cash flow generation, which is underpinned by an operating discipline focused on cost control and working capital management. This emphasis gives us the flexibility for prudent capital deployment, while allowing us to step down debt over time, and preserves a strong balance sheet for future opportunities.

We evaluate a variety of capital deployment options based on current market conditions and our long-term outlook, and we believe agility is a key component of our capital deployment strategy as market conditions change over time. Our capital deployment priorities include investments in our products and services to drive long-term growth, a predictable dividend, strategic acquisitions and opportunistic share repurchases.

We believe cash generated by operating activities, supplemented by commercial paper issuances, is sufficient to satisfy our short- and long-term liquidity needs. An additional potential source of capital is the issuance of long-term debt in capital market transactions.

We ended 2022 with a cash and equivalents balance of \$1.2 billion compared with \$1.6 billion at the end of 2021. The following is a discussion of our major operating, investing and financing activities in 2022 and 2021, as classified on the Consolidated Statement of Cash Flows in Item 8:

Year Ended December 31	2022	2021
Net cash provided by operating activities	\$ 4,579	\$ 4,271
Net cash used by investing activities	(1,489)	(882)
Net cash used by financing activities	(3,471)	(4,590)

OPERATING ACTIVITIES

Cash provided by operating activities was \$4.6 billion in 2022 compared with \$4.3 billion in 2021. The primary driver of cash inflows in both years was net earnings. Cash flows in both years were affected positively by an increase in customer deposits driven by Gulfstream aircraft orders. While cash flows in 2021 were affected positively by a reduction in inventory from the sale of G500 flight-test aircraft in our Aerospace segment, cash flows in 2022 were affected negatively by growth in inventory related to new aircraft models awaiting certification from the U.S. Federal Aviation Administration (FAA).

INVESTING ACTIVITIES

Cash used by investing activities was \$1.5 billion in 2022 and \$882 in 2021. Our investing activities include cash paid for capital expenditures and business acquisitions; purchases, sales and maturities of marketable securities; and proceeds from asset sales.

Capital Expenditures. The primary use of cash for investing activities in both years was capital expenditures. Capital expenditures were \$1.1 billion in 2022 and \$887 in 2021. Capital expenditures have been at an elevated level the past two years as we continue to invest in our shipyards, particularly for the planned growth in submarine construction. Other capital expenditures include equipment and facility enhancements to support new and existing programs across our businesses. We expect capital expenditures to be just below 2.5% of revenue in 2023.

Business Acquisitions. In 2022, we acquired a provider of mission-critical embedded computing solutions for U.S. Navy platforms in our Technologies segment.

FINANCING ACTIVITIES

Cash used by financing activities was \$3.5 billion in 2022 and \$4.6 billion in 2021. Financing activities include the use of cash for repurchases of common stock, payment of dividends, and debt and commercial paper repayments. Our financing activities also include proceeds received from debt and commercial paper issuances and employee stock option exercises.

Dividends. On March 2, 2022, our board of directors declared an increased quarterly dividend of \$1.26 per share, the 25th consecutive annual increase. Previously, the board had increased the quarterly

dividend to \$1.19 per share in March 2021. Cash dividends paid were \$1.4 billion in 2022 and \$1.3 billion in 2021.

Share Repurchases. Our board of directors from time to time authorizes management to repurchase outstanding shares of our common stock on the open market. We paid \$1.2 billion and \$1.8 billion in 2022 and 2021, respectively, to repurchase our outstanding shares. On December 31, 2022, 6.7 million shares remained authorized by our board of directors for repurchase, representing 2.4% of our total shares outstanding.

Debt Issuances and Repayments. In November 2022, we repaid fixed-rate notes of \$1 billion at the scheduled maturity using cash on hand. Fixed-rate notes of \$750 and \$500 mature in May 2023 and August 2023, respectively. We currently plan to repay these notes at maturity using cash on hand, potentially supplemented by commercial paper or other borrowings. For additional information regarding our debt obligations, including scheduled debt maturities and interest rates, see Note K to the Consolidated Financial Statements in Item 8.

On December 31, 2022, we had no commercial paper outstanding, but we maintain the ability to access the commercial paper market in the future. Separately, we have a \$4 billion committed bank credit facility for general corporate purposes and working capital needs and to support our commercial paper issuances. We also have an effective shelf registration on file with the Securities and Exchange Commission (SEC) that allows us to access the debt markets.

NON-GAAP FINANCIAL MEASURES

We emphasize the efficient conversion of net earnings into cash and the deployment of that cash to maximize shareholder returns. As described below, we use free cash flow and return on invested capital (ROIC) to measure our performance in these areas. While we believe these metrics provide useful information, they are not defined operating measures under U.S. generally accepted accounting principles (GAAP), and there are limitations associated with their use. Our calculation of these metrics may not be completely comparable to similarly titled measures of other companies due to potential differences in the method of calculation. As a result, the use of these metrics should not be considered in isolation from, or as a substitute for, GAAP measures.

Free Cash Flow. We define free cash flow as net cash provided by operating activities less capital expenditures. We believe free cash flow is a useful measure for investors because it portrays our ability to generate cash from our businesses for purposes such as repaying debt, funding business acquisitions, repurchasing our common stock and paying dividends. We use free cash flow to assess the quality of our earnings and as a key performance measure in evaluating management. The following table reconciles the free cash flow with net cash provided by operating activities, as classified on the Consolidated Statement of Cash Flows in Item 8:

Year Ended December 31	2022	2021	2020
Net cash provided by operating activities	\$ 4,579	\$ 4,271	\$ 3,858
Capital expenditures	(1,114)	(887)	(967)
Free cash flow	\$ 3,465	\$ 3,384	\$ 2,891
Cash flows as a percentage of net earnings:			
Net cash provided by operating activities	135%	131%	122%
Free cash flow	102%	104%	91%

Return on Invested Capital. We believe ROIC is a useful measure for investors because it reflects our ability to generate returns from the capital we have deployed in our operations. We use ROIC to evaluate investment decisions and as a performance measure in evaluating management. We define ROIC as net operating profit after taxes divided by average invested capital. Net operating profit after taxes is defined as net earnings plus after-tax interest and amortization expense, calculated using the statutory federal income tax rate. Average invested capital is defined as the sum of the average debt and average shareholders' equity excluding accumulated other comprehensive loss. Average debt and average shareholders' equity excluding accumulated other comprehensive loss are calculated using the respective balances at the end of the preceding year and the respective balances at the end of each of the four quarters of the year presented. ROIC excludes goodwill impairments and non-economic accounting changes as they are not reflective of company performance.

ROIC is calculated as follows:

Year Ended December 31	2022	2021	2020
Net earnings	\$ 3,390	\$ 3,257	\$ 3,167
After-tax interest expense	309	340	386
After-tax amortization expense	235	254	280
Net operating profit after taxes	\$ 3,934	\$ 3,851	\$ 3,833
Average invested capital	\$ 31,260	\$ 32,270	\$ 32,431
Return on invested capital	12.6%	11.9%	11.8%

CASH REQUIREMENTS

The following is a discussion of how we expect to meet the future cash requirements from known contractual and other obligations.

The majority of our revenue is derived from long-term contracts and programs that can span several years. We similarly enter into long-term agreements with suppliers and subcontractors for goods and services in support of these contracts and programs with payment terms that are generally aligned with the payment terms from our customers. In some instances, we require advance payments or deposits from our customers, which help fund our purchase commitments and reduce the risk of customer performance.

Additionally, we have significant liabilities under our defined benefit retirement plans. As these liabilities are settled using plan assets, our future cash requirements associated with these liabilities are generally limited to the annual cash contributions to these plans required in accordance with Internal Revenue Service (IRS) regulations. See Note S to the Consolidated Financial Statements in Item 8 for additional information.

Other obligations, such as scheduled principal and interest payments on our fixed-rate notes, and scheduled payments in accordance with our lease agreements are expected to be satisfied using cash generated from operations. See Notes J and K to the Consolidated Financial Statements in Item 8 for additional information.

ADDITIONAL FINANCIAL INFORMATION

APPLICATION OF CRITICAL ACCOUNTING POLICIES AND ESTIMATES

Management's Discussion and Analysis of Financial Condition and Results of Operations is based on the Consolidated Financial Statements, which have been prepared in accordance with GAAP. The preparation of financial statements in accordance with GAAP requires that we make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the financial statements, as well as the reported amounts of revenue and expenses during the reporting period. We employ judgment in making our estimates, but they are based on historical experience, currently available information and various other assumptions that we believe to be reasonable under the circumstances. Actual results may differ from these estimates. We believe our judgment is applied consistently and produces financial information that fairly depicts our results of operations for all periods presented.

In our opinion, the following policies are critical and require the use of significant judgment in their application:

Revenue. A performance obligation is a promise in a contract to transfer a distinct good or service to the customer, and is the unit of account for revenue. A contract's transaction price is allocated to each distinct performance obligation within that contract and recognized as revenue when, or as, the performance obligation is satisfied. Our performance obligations are satisfied over time as work progresses or at a point in time.

Substantially all of our revenue in the defense segments is recognized over time because control is transferred continuously to our customers. Typically, revenue is recognized over time using costs incurred to date relative to total estimated costs at completion to measure progress toward satisfying our performance obligations. Incurred costs represent work performed, which corresponds with, and thereby best depicts, the transfer of control to the customer. Contract costs include labor, material, overhead and, when appropriate, G&A expenses.

Most of our revenue recognized at a point in time is for the manufacture of business jet aircraft in our Aerospace segment. Revenue on these contracts is recognized when the customer obtains control of the asset, which is generally upon delivery and acceptance by the customer of the fully outfitted aircraft.

The majority of our revenue is derived from long-term contracts and programs that can span several years. Accounting for long-term contracts and programs involves the use of various techniques to estimate total contract revenue and costs. For long-term contracts, we estimate the profit on a contract as the difference between the total estimated revenue and expected costs to complete a contract and recognize that profit over the life of the contract.

Contract estimates are based on various assumptions to project the outcome of future events that often span several years. These assumptions include labor productivity and availability; the complexity of the work to be performed; the cost and availability of materials; the performance of subcontractors; and the availability and timing of funding from the customer.

The nature of our contracts gives rise to several types of variable consideration, including claims, award fees and incentive fees. We include in our contract estimates additional revenue for contract modifications or claims against the customer when we believe we have an enforceable right to the modification or claim, the amount can be estimated reliably and its realization is probable. In evaluating these criteria, we consider the contractual/legal basis for the claim, the cause of any additional costs

incurred, the reasonableness of those costs and the objective evidence available to support the claim. We include award fees or incentive fees in the estimated transaction price when there is a basis to reasonably estimate the amount of the fee. These estimates are based on historical award experience, anticipated performance and our best judgment at the time.

As a significant change in one or more of these estimates could affect the profitability of our contracts, we review and update our contract-related estimates regularly. We recognize adjustments in estimated profit on contracts under the cumulative catch-up method. Under this method, the impact of the adjustment on profit recorded to date on a contract is recognized in the period the adjustment is identified. Revenue and profit in future periods of contract performance are recognized using the adjusted estimate. The aggregate impact of adjustments in contract estimates increased our operating earnings (and diluted earnings per share) by \$370 (\$1.05) in 2022 and \$377 (\$1.06) in 2021. While no adjustment on any one contract was material to the Consolidated Financial Statements in 2022 or 2021, our Marine Systems segment's 2022 results were affected negatively by supply chain impacts to the Virginia-class submarine schedule, offset partially by improved performance on auxiliary and support ships.

Consistent with industry practice, we classify assets and liabilities related to long-term contracts as current, even though some of these amounts may not be realized within one year. The timing of revenue recognition, billings and cash collections results in billed accounts receivable, unbilled receivables (contract assets), and customer advances and deposits (contract liabilities) on the Consolidated Balance Sheet. These assets and liabilities are reported on the Consolidated Balance Sheet on a contract-by-contract basis at the end of each reporting period.

Long-lived Assets and Goodwill. We review long-lived assets, including intangible assets subject to amortization, for impairment whenever events or changes in circumstances indicate that the carrying value of the assets may not be recoverable. We assess the recoverability of the carrying value of assets held for use based on a review of undiscounted projected cash flows. Impairment losses, where identified, are measured as the excess of the carrying value of the long-lived assets over the estimated fair value as determined by discounted cash flows.

Goodwill represents the purchase price paid in excess of the fair value of net tangible and intangible assets acquired in a business combination. We review goodwill for impairment annually at each of our reporting units or when circumstances indicate that the likelihood of an impairment is greater than 50%. Such circumstances include a significant adverse change in the business climate for one of our reporting units or a decision to dispose of a reporting unit or a significant portion of a reporting unit. Our reporting units are consistent with our operating segments in Note O to the Consolidated Financial Statements in Item 8. We use both qualitative and quantitative approaches when testing goodwill for impairment. When determining the approach to be used, we consider the current facts and circumstances of each reporting unit as well as the excess of each reporting unit's estimated fair value over its carrying value based on our most recent quantitative assessments. Our qualitative approach evaluates the business environment and various events impacting the reporting unit including, but not limited to, macroeconomic conditions, changes in the business environment and reporting unit-specific events. If, based on the qualitative assessment, we determine that it is more likely than not that the fair value of a reporting unit is greater than its carrying value, then a quantitative assessment is not necessary. However, if a quantitative assessment is determined to be necessary, we compare the fair value of a reporting unit to its carrying value and, if necessary, recognize an impairment loss for the amount by which the carrying value exceeds the reporting unit's fair value.

Our estimate of fair value is based primarily on the discounted cash flows of the underlying operations and requires the use of judgment by management. The process requires numerous assumptions, including the timing of work embedded in our backlog, our performance and profitability under our contracts, our success in securing future business, the appropriate risk-adjusted interest rate used to discount the projected cash flows, and terminal-value growth rates applied to the final year of projected cash flows. Due to the variables inherent in our estimates of fair value, differences in assumptions may have a material effect on the result of our impairment analysis. To assess the reasonableness of our discounted cash flows, we compare the sum of our reporting units' fair value to our market capitalization. Additionally, we evaluate the reasonableness of each reporting unit's fair value by comparing the fair value to peer companies and recent relevant market transactions.

In the fourth quarter of 2022, we completed qualitative assessments for our Aerospace, Marine Systems and Combat Systems reporting units as the estimated fair values of each of the reporting units significantly exceeded the respective carrying values based on our most recent quantitative assessments, which were performed in the fourth quarter of 2018. Our qualitative assessments did not present indicators of impairment for the reporting units.

In the fourth quarter of 2022, we completed a quantitative assessment for our Technologies reporting unit, and the results indicated that no impairment existed. The Technologies reporting unit's estimated fair value exceeded its carrying value by approximately 25%. The fair value of the Technologies reporting unit decreased since our previous quantitative assessment, performed in the fourth quarter of 2020, driven by the negative impact of increased interest rates on our discounted projected cash flows. As a result, a material decrease in the fair value or increase in carrying value would put the reporting unit at risk of goodwill impairment. For example, a 50-basis-point increase in interest rates would lower our discounted projected cash flows and negatively impact the fair value of the Technologies reporting unit, reducing the cushion to approximately 15%. We believe the projections and assumptions we used in estimating fair value are reasonable, but it is possible actual experience could differ.

Commitments and Contingencies. We are subject to litigation and other legal proceedings arising either from the normal course of business or under provisions relating to the protection of the environment. Estimating liabilities and costs associated with these matters requires the use of judgment. We record a charge against earnings when a liability associated with claims or pending or threatened litigation is probable and when our exposure is reasonably estimable. The ultimate resolution of our exposure related to these matters may change as further facts and circumstances become known.

Retirement Plans. Our pension and other post-retirement benefit costs and obligations depend on several assumptions and estimates, which are based on our best judgment, including consideration of current and future market conditions. For a discussion of our assumptions and any changes to these assumptions, as well as the impact of these changes, which is reported as an actuarial gain or loss in the reconciliation of the change in the benefit obligation, see Note S to the Consolidated Financial Statements in Item 8. The key assumption is the interest rates used to discount estimated future pension benefits. We base the discount rates on a current yield curve developed from a portfolio of high-quality, fixed-income investments with maturities consistent with the projected benefit payout period. The effect of a 25-basis-point increase or decrease in the discount rate assumption on the December 31, 2022, pension benefit obligation is (\$319) and \$334, respectively.

As described in Note S to the Consolidated Financial Statements in Item 8, our contractual arrangements with the U.S. government provide for the recovery of benefit costs for our government retirement plans. We have elected to defer recognition of the benefit costs until such costs can be

allocated to contracts. Therefore, the impact of annual changes in financial reporting assumptions on the retirement benefit cost for these plans does not immediately affect our operating results.

GUARANTOR FINANCIAL INFORMATION

The outstanding notes described in Note K to the Consolidated Financial Statements in Item 8, issued by General Dynamics Corporation (the parent), are fully and unconditionally guaranteed on an unsecured, joint and several basis by several of the parent's 100%-owned subsidiaries (the guarantors). The guarantee of each guarantor ranks equally in right of payment with all other existing and future senior unsecured indebtedness of such guarantor. A listing of the guarantors is included in an exhibit to this Form 10-K.

Because the parent is a holding company, its cash flow and ability to service its debt, including the outstanding notes, depends on the performance of its subsidiaries and the ability of those subsidiaries to distribute cash to the parent, whether by dividends, loans or otherwise. Holders of the outstanding notes have a direct claim only against the parent and the guarantors.

Under the relevant indenture, the guarantee of each guarantor is limited to the maximum amount that can be guaranteed without rendering the guarantee voidable under applicable laws relating to fraudulent conveyance or fraudulent transfer or similar laws affecting the rights of creditors generally. Each indenture also provides that, in the event (1) of a merger, consolidation or sale or disposition of all or substantially all of the assets of a guarantor (other than a transaction with the parent or any of its subsidiaries) or (2) there occurs a transfer, sale or other disposition of the voting stock of a guarantor so that the guarantor is no longer a subsidiary of the parent, then the guarantor or the entity acquiring the assets (in the event of the sale or other disposition of all or substantially all of the assets of a guarantor) will be released and relieved of any obligations under the guarantee.

The following summarized financial information presents the parent and guarantors (collectively, the combined obligor group) on a combined basis. The summarized financial information of the combined obligor group excludes net investment in and earnings of subsidiaries related to interests held by the combined obligor group in subsidiaries that are not guarantors of the notes.

STATEMENT OF EARNINGS INFORMATION

Year Ended December 31	2022
Revenue	\$ 14,246
Operating costs and expenses, excluding G&A	(12,310)
Net earnings	840

BALANCE SHEET INFORMATION

	December 31, 2022	December 31, 2021
Cash and equivalents	\$ 540	\$ 925
Other current assets	4,279	3,149
Noncurrent assets	4,164	3,597
Total assets	\$ 8,983	\$ 7,671
Short-term debt and current portion of long-term debt	\$ 1,250	\$ 999
Other current liabilities	3,392	3,190
Long-term debt	9,189	10,424
Other noncurrent liabilities	3,814	3,844
Total liabilities	\$ 17,645	\$ 18,457

The summarized balance sheet information presented above includes the funded status of the company's primary qualified U.S. government pension plans as the parent has the ultimate obligation for the plans.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

We are exposed to market risk, primarily from foreign currency exchange rates, interest rates, commodity prices and investments.

Foreign Currency Risk. Our exchange-rate sensitivity relates primarily to changes in the Canadian dollar, euro and Swiss franc exchange rates. We had notional forward exchange contracts outstanding of \$6.9 billion and \$6.8 billion on December 31, 2022 and 2021, respectively. A 10% unfavorable rate movement in our portfolio of forward exchange contracts would have resulted in the following hypothetical, incremental pretax losses:

(Dollars in millions)	2022	2021
Recognized	\$ (133)	\$ (1)
Unrecognized	(90)	(196)

These losses would be offset by corresponding gains in the remeasurement of the underlying transactions being hedged. We believe these foreign currency forward exchange contracts and the offsetting underlying commitments, when taken together, do not create material market risk.

Interest Rate Risk. On December 31, 2022, we had \$10.5 billion principal amount of fixed-rate debt. Our fixed-rate debt obligations are not putable, and we do not trade these securities in the market. A 10% unfavorable interest rate movement would not have a material impact on the fair value of our fixed-rate debt.

Commodity Price and Investment Risk. See Note Q to the Consolidated Financial Statements in Item 8 for a discussion of commodity price and investment risk.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

CONSOLIDATED STATEMENT OF EARNINGS

	Year Ended December 31		
(Dollars in millions, except per-share amounts)	2022	2021	2020
Revenue:			
Products	\$ 23,022	\$ 22,428	\$ 22,188
Services	16,385	16,041	15,737
	39,407	38,469	37,925
Operating costs and expenses:			
Products	(18,981)	(18,524)	(18,192)
Services	(13,804)	(13,537)	(13,408)
General and administrative (G&A)	(2,411)	(2,245)	(2,192)
	(35,196)	(34,306)	(33,792)
Operating earnings	4,211	4,163	4,133
Other, net	189	134	82
Interest, net	(364)	(424)	(477)
Earnings before income tax	4,036	3,873	3,738
Provision for income tax, net	(646)	(616)	(571)
Net earnings	\$ 3,390	\$ 3,257	\$ 3,167
Earnings per share			
Basic	\$ 12.31	\$ 11.61	\$ 11.04
Diluted	\$ 12.19	\$ 11.55	\$ 11.00

The accompanying Notes to Consolidated Financial Statements are an integral part of these financial statements.

CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME

	Year Ended December 31		
(Dollars in millions)	2022	2021	2020
Net earnings	\$ 3,390	\$ 3,257	\$ 3,167
Changes in unrealized cash flow hedges	(190)	(174)	366
Foreign currency translation adjustments	(278)	(103)	353
Changes in retirement plans' funded status	241	2,365	(453)
Other comprehensive (loss) income, pretax	(227)	2,088	266
(Provision) benefit for income tax, net	(5)	(458)	2
Other comprehensive (loss) income, net of tax	(232)	1,630	268
Comprehensive income	\$ 3,158	\$ 4,887	\$ 3,435

The accompanying Notes to Consolidated Financial Statements are an integral part of these financial statements.

CONSOLIDATED BALANCE SHEET

	December 31	
(Dollars in millions)	2022	2021
ASSETS		
Current assets:		
Cash and equivalents	\$ 1,242	\$ 1,603
Accounts receivable	3,008	3,041
Unbilled receivables	8,795	8,498
Inventories	6,322	5,340
Other current assets	1,696	1,505
Total current assets	21,063	19,987
Noncurrent assets:		
Property, plant and equipment, net	5,900	5,417
Intangible assets, net	1,824	1,978
Goodwill	20,334	20,098
Other assets	2,464	2,593
Total noncurrent assets	30,522	30,086
Total assets	\$ 51,585	\$ 50,073
LIABILITIES AND SHAREHOLDERS' EQUITY		
Current liabilities:		
Short-term debt and current portion of long-term debt	\$ 1,253	\$ 1,005
Accounts payable	3,398	3,167
Customer advances and deposits	7,436	6,266
Other current liabilities	3,254	3,540
Total current liabilities	15,341	13,978
Noncurrent liabilities:		
Long-term debt	9,243	10,490
Other liabilities	8,433	7,964
Commitments and contingencies (see Note M)		
Total noncurrent liabilities	17,676	18,454
Shareholders' equity:		
Common stock	482	482
Surplus	3,556	3,278
Retained earnings	37,403	35,420
Treasury stock	(20,721)	(19,619)
Accumulated other comprehensive loss	(2,152)	(1,920)
Total shareholders' equity	18,568	17,641
Total liabilities and shareholders' equity	\$ 51,585	\$ 50,073

The accompanying Notes to Consolidated Financial Statements are an integral part of these financial statements.

CONSOLIDATED STATEMENT OF CASH FLOWS

(Dollars in millions)	Year Ended December 31		
	2022	2021	2020
Cash flows from operating activities – continuing operations:			
Net earnings	\$ 3,390	\$ 3,257	\$ 3,167
Adjustments to reconcile net earnings to net cash from operating activities:			
Depreciation of property, plant and equipment	586	568	523
Amortization of intangible and finance lease right-of-use assets	298	322	355
Equity-based compensation expense	165	126	128
Deferred income tax benefit	(178)	(66)	(127)
(Increase) decrease in assets, net of effects of business acquisitions:			
Accounts receivable	46	138	371
Unbilled receivables	(256)	(410)	(116)
Inventories	(980)	405	502
Increase (decrease) in liabilities, net of effects of business acquisitions:			
Accounts payable	224	194	(215)
Customer advances and deposits	2,082	354	(707)
Income taxes payable	(436)	(45)	(39)
Other, net	(362)	(572)	16
Net cash provided by operating activities	4,579	4,271	3,858
Cash flows from investing activities:			
Capital expenditures	(1,114)	(887)	(967)
Other, net	(375)	5	(7)
Net cash used by investing activities	(1,489)	(882)	(974)
Cash flows from financing activities:			
Dividends paid	(1,369)	(1,315)	(1,240)
Purchases of common stock	(1,229)	(1,828)	(587)
Repayment of fixed-rate notes	(1,000)	(2,500)	(2,000)
Proceeds from commercial paper, gross (maturities greater than 3 months)	—	1,997	420
Repayment of commercial paper, gross (maturities greater than 3 months)	—	(1,997)	(420)
Proceeds from fixed-rate notes	—	1,497	3,960
Repayment of floating-rate notes	—	(500)	(500)
Proceeds from (repayment of) credit facility, net	—	6	(441)
Other, net	127	50	(95)
Net cash used by financing activities	(3,471)	(4,590)	(903)
Net cash provided (used) by discontinued operations	20	(20)	(59)
Net (decrease) increase in cash and equivalents	(361)	(1,221)	1,922
Cash and equivalents at beginning of year	1,603	2,824	902
Cash and equivalents at end of year	\$ 1,242	\$ 1,603	\$ 2,824

The accompanying Notes to Consolidated Financial Statements are an integral part of these financial statements.

CONSOLIDATED STATEMENT OF SHAREHOLDERS' EQUITY

	Common Stock		Retained	Treasury	Accumulated Other Comprehensive	Total
(Dollars in millions)	Par	Surplus	Earnings	Stock	Loss	Shareholders' Equity
December 31, 2019	\$ 482	\$ 3,039	\$ 31,633	\$ (17,358)	\$ (3,818)	\$ 13,978
Net earnings	—	—	3,167	—	—	3,167
Cash dividends declared	—	—	(1,265)	—	—	(1,265)
Equity-based awards	—	85	—	67	—	152
Shares purchased	—	—	—	(602)	—	(602)
Other comprehensive income	—	—	—	—	268	268
Other	—	—	(37)	—	—	(37)
December 31, 2020	482	3,124	33,498	(17,893)	(3,550)	15,661
Net earnings	—	—	3,257	—	—	3,257
Cash dividends declared	—	—	(1,335)	—	—	(1,335)
Equity-based awards	—	154	—	109	—	263
Shares purchased	—	—	—	(1,835)	—	(1,835)
Other comprehensive income	—	—	—	—	1,630	1,630
December 31, 2021	482	3,278	35,420	(19,619)	(1,920)	17,641
Net earnings	—	—	3,390	—	—	3,390
Cash dividends declared	—	—	(1,391)	—	—	(1,391)
Equity-based awards	—	278	—	105	—	383
Shares purchased	—	—	—	(1,207)	—	(1,207)
Other comprehensive loss	—	—	—	—	(232)	(232)
Other	—	—	(16)	—	—	(16)
December 31, 2022	\$ 482	\$ 3,556	\$ 37,403	\$ (20,721)	\$ (2,152)	\$ 18,568

The accompanying Notes to Consolidated Financial Statements are an integral part of these financial statements.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(Dollars in millions, except share and per-share amounts or unless otherwise noted)

A. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

General Dynamics is a global aerospace and defense company that offers a broad portfolio of products and services in business aviation; ship construction and repair; land combat vehicles, weapons systems and munitions; and technology products and services.

The following is a discussion of certain significant accounting policies, and discussion of our other significant accounting policies is contained in the notes to these financial statements.

Basis of Consolidation and Classification. The Consolidated Financial Statements include the accounts of General Dynamics Corporation and our wholly owned and majority-owned subsidiaries. We eliminate all intercompany balances and transactions in the Consolidated Financial Statements.

Consistent with industry practice, we classify assets and liabilities related to long-term contracts as current, even though some of these amounts may not be realized within one year.

Use of Estimates. The nature of our business requires that we make estimates and assumptions in accordance with U.S. generally accepted accounting principles (GAAP). These estimates and assumptions affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the financial statements, as well as the reported amounts of revenue and expenses during the reporting period. We base our estimates on historical experience, currently available information and various other assumptions that we believe are reasonable under the circumstances. Actual results may differ from these estimates.

Research and Development Expenses. Company-sponsored research and development (R&D) expenses, including Aerospace product-development costs, were \$480 in 2022, \$415 in 2021 and \$374 in 2020. R&D expenses have trended upward driven by activities primarily associated with ongoing new aircraft development efforts. R&D expenses are included in operating costs and expenses in the Consolidated Statement of Earnings in the period in which they are incurred. Customer-sponsored R&D expenses are charged directly to the related contracts.

The Aerospace segment has cost-sharing arrangements with some of its suppliers that enhance the segment's internal development capabilities and offset a portion of the financial cost associated with the segment's product development efforts. These arrangements explicitly state that supplier contributions are for reimbursement of costs we incur in the development of new aircraft models and technologies, and we retain substantial rights in the products developed under these arrangements. We record amounts received from these cost-sharing arrangements as a reduction of R&D expenses. We have no obligation to refund any amounts received under the agreements regardless of the outcome of the development efforts. Under the typical terms of an agreement, payments received from suppliers for their share of the costs are based on milestones and are recognized as received. Our policy is to defer payments in excess of the costs we have incurred.

Interest, Net. Net interest expense consisted of the following:

Year Ended December 31	2022	2021	2020
Interest expense	\$ 391	\$ 431	\$ 489
Interest income	(27)	(7)	(12)
Interest expense, net	\$ 364	\$ 424	\$ 477

See Note K for information regarding our debt obligations, including interest rates.

Cash and Equivalents and Investments in Debt and Equity Securities. We consider securities with a maturity of three months or less to be cash equivalents. Our cash balances are invested primarily in time deposits rated A-/A3 or higher. Our investments in other securities are included in other current and noncurrent assets on the Consolidated Balance Sheet. We report our equity securities at fair value with subsequent changes in fair value recognized in net earnings. We report our available-for-sale debt securities at fair value with unrealized gains and losses recognized as a component of other comprehensive (loss) income in the Consolidated Statement of Comprehensive Income. We had no trading or held-to-maturity debt securities on December 31, 2022 or 2021. See Note P for additional information regarding our investments in debt and equity securities.

Acquisitions. In the last three years, we acquired four businesses in our Aerospace segment, two businesses in our Combat Systems segment and a business in our Technologies segment. The operating results of these acquisitions have been included in our reported results since their respective closing dates. The purchase prices of the acquisitions have been allocated to the estimated fair value of net tangible and intangible assets acquired, with any excess purchase price recorded as goodwill.

Long-lived Assets and Goodwill. We review long-lived assets, including intangible assets subject to amortization, for impairment whenever events or changes in circumstances indicate that the carrying value of the assets may not be recoverable. We assess the recoverability of the carrying value of assets held for use based on a review of undiscounted projected cash flows. Impairment losses, where identified, are measured as the excess of the carrying value of the long-lived assets over the estimated fair value as determined by discounted cash flows.

Goodwill represents the purchase price paid in excess of the fair value of net tangible and intangible assets acquired in a business combination. We review goodwill for impairment annually at each of our reporting units or when circumstances indicate that the likelihood of an impairment is greater than 50%. Our reporting units are consistent with our operating segments in Note O. We use both qualitative and quantitative approaches when testing goodwill for impairment. When determining the approach to be used, we consider the current facts and circumstances of each reporting unit as well as the excess of each reporting unit's estimated fair value over its carrying value based on our most recent quantitative assessments. Our qualitative approach evaluates the business environment and various events impacting the reporting unit including, but not limited to, macroeconomic conditions, changes in the business environment and reporting unit-specific events. If, based on the qualitative assessment, we determine that it is more likely than not that the fair value of a reporting unit is greater than its carrying value, then a quantitative assessment is not necessary. However, if a quantitative assessment is determined to be necessary, we compare the fair value of a reporting unit to its carrying value and, if necessary, recognize an impairment loss for the amount by which the carrying value exceeds the reporting unit's fair value. Our estimate of fair value is based primarily on the discounted cash flows of the underlying operations.

In the fourth quarter of 2022, we completed qualitative assessments for our Aerospace, Marine Systems and Combat Systems reporting units as the estimated fair values of each of the reporting units

significantly exceeded the respective carrying values based on our most recent quantitative assessments, which were performed in the fourth quarter of 2018. Our qualitative assessments did not present indicators of impairment for the reporting units.

In the fourth quarter of 2022, we completed a quantitative assessment for our Technologies reporting unit, and the results indicated that no impairment existed. The Technologies reporting unit's estimated fair value exceeded its carrying value by approximately 25%. The fair value of the Technologies reporting unit decreased since our previous quantitative assessment, performed in the fourth quarter of 2020, driven by the negative impact of increased interest rates on our discounted projected cash flows.

For a summary of our goodwill by reporting unit, see Note H.

Accounting Standards Updates. There are accounting standards that have been issued by the Financial Accounting Standards Board (FASB) but are not yet effective. These standards are not expected to have a material impact on our results of operations, financial condition or cash flows.

B. REVENUE

Performance Obligations. A performance obligation is a promise in a contract to transfer a distinct good or service to the customer, and is the unit of account for revenue. A contract's transaction price is allocated to each distinct performance obligation within that contract and recognized as revenue when, or as, the performance obligation is satisfied. The majority of our contracts have a single performance obligation as the promise to transfer the individual goods or services is not separately identifiable from other promises in the contracts and is, therefore, not distinct. Some of our contracts have multiple performance obligations, most commonly due to the contract covering multiple phases of the product life cycle (development, production, maintenance and support). For contracts with multiple performance obligations, we allocate the contract's transaction price to each performance obligation using our best estimate of the standalone selling price of each distinct good or service in the contract. The primary method used to estimate standalone selling price is the expected cost plus a margin approach, under which we forecast our expected costs of satisfying a performance obligation and then add an appropriate margin for that distinct good or service.

Contract modifications are routine in the performance of our contracts. Contracts are often modified to account for changes in contract specifications or requirements. In most instances, contract modifications are for goods or services that are not distinct and, therefore, are accounted for as part of the existing contract.

Our performance obligations are satisfied over time as work progresses or at a point in time. Revenue from products and services transferred to customers over time accounted for 77% of our revenue in 2022, 78% in 2021 and 77% in 2020. Substantially all of our revenue in the defense segments is recognized over time because control is transferred continuously to our customers. Typically, revenue is recognized over time using costs incurred to date relative to total estimated costs at completion to measure progress toward satisfying our performance obligations. Incurred costs represent work performed, which corresponds with, and thereby best depicts, the transfer of control to the customer. Contract costs include labor, material, overhead and, when appropriate, G&A expenses.

Revenue from goods and services transferred to customers at a point in time accounted for 23% of our revenue in 2022, 22% in 2021 and 23% in 2020. Most of our revenue recognized at a point in time is for the manufacture of business jet aircraft in our Aerospace segment. Revenue on these contracts is

recognized when the customer obtains control of the asset, which is generally upon delivery and acceptance by the customer of the fully outfitted aircraft.

On December 31, 2022, we had \$91.1 billion of remaining performance obligations, which we also refer to as total backlog. We expect to recognize approximately 35% of our remaining performance obligations as revenue in 2023, an additional 40% by the end of 2025 and the balance thereafter.

Contract Estimates. The majority of our revenue is derived from long-term contracts and programs that can span several years. Accounting for long-term contracts and programs involves the use of various techniques to estimate total contract revenue and costs. For long-term contracts, we estimate the profit on a contract as the difference between the total estimated revenue and expected costs to complete a contract and recognize that profit over the life of the contract.

Contract estimates are based on various assumptions to project the outcome of future events that often span several years. These assumptions include labor productivity and availability; the complexity of the work to be performed; the cost and availability of materials; the performance of subcontractors; and the availability and timing of funding from the customer.

The nature of our contracts gives rise to several types of variable consideration, including claims, award fees and incentive fees. We include in our contract estimates additional revenue for contract modifications or claims against the customer when we believe we have an enforceable right to the modification or claim, the amount can be estimated reliably and its realization is probable. In evaluating these criteria, we consider the contractual/legal basis for the claim, the cause of any additional costs incurred, the reasonableness of those costs and the objective evidence available to support the claim. We include award fees or incentive fees in the estimated transaction price when there is a basis to reasonably estimate the amount of the fee. These estimates are based on historical award experience, anticipated performance and our best judgment at the time.

As a significant change in one or more of these estimates could affect the profitability of our contracts, we review and update our contract-related estimates regularly. We recognize adjustments in estimated profit on contracts under the cumulative catch-up method. Under this method, the impact of the adjustment on profit recorded to date on a contract is recognized in the period the adjustment is identified. Revenue and profit in future periods of contract performance are recognized using the adjusted estimate. If at any time the estimate of contract profitability indicates an anticipated loss on the contract, we recognize the total loss in the period it is identified.

The impact of adjustments in contract estimates on our operating earnings can be reflected in either operating costs and expenses or revenue. The aggregate impact of adjustments in contract estimates increased our revenue, operating earnings and diluted earnings per share as follows:

Year Ended December 31	2022	2021	2020
Revenue	\$ 343	\$ 411	\$ 389
Operating earnings	370	377	283
Diluted earnings per share	\$ 1.05	\$ 1.06	\$ 0.78

While no adjustment on any one contract was material to the Consolidated Financial Statements in 2022, 2021 or 2020, our Marine Systems segment's 2022 results were affected negatively by supply chain impacts to the Virginia-class submarine schedule, offset partially by improved performance on auxiliary and support ships.

Revenue by Category. Our portfolio of products and services consists of approximately 10,000 active contracts. The following series of tables presents our revenue disaggregated by several categories.

Revenue by major products and services was as follows:

Year Ended December 31	2022	2021	2020
Aircraft manufacturing	\$ 5,876	\$ 5,864	\$ 6,115
Aircraft services	2,691	2,271	1,960
Total Aerospace	8,567	8,135	8,075
Nuclear-powered submarines	7,310	7,117	6,938
Surface ships	2,561	2,328	2,055
Repair and other services	1,169	1,081	986
Total Marine Systems	11,040	10,526	9,979
Military vehicles	4,581	4,699	4,687
Weapons systems, armament and munitions	2,024	2,006	1,991
Engineering and other services	703	646	545
Total Combat Systems	7,308	7,351	7,223
Information technology (IT) services	8,195	8,069	7,892
C5ISR* solutions	4,297	4,388	4,756
Total Technologies	12,492	12,457	12,648
Total revenue	\$ 39,407	\$ 38,469	\$ 37,925

* Command, control, communications, computers, cyber, intelligence, surveillance and reconnaissance

Revenue by contract type was as follows:

Year Ended December 31, 2022	Aerospace	Marine Systems	Combat Systems	Technologies	Total Revenue
Fixed-price	\$ 7,626	\$ 6,509	\$ 6,434	\$ 5,402	\$ 25,971
Cost-reimbursement	—	4,529	813	5,190	10,532
Time-and-materials	941	2	61	1,900	2,904
Total revenue	\$ 8,567	\$ 11,040	\$ 7,308	\$ 12,492	\$ 39,407

Year Ended December 31, 2021	Aerospace	Marine Systems	Combat Systems	Technologies	Total Revenue
Fixed-price	\$ 7,329	\$ 6,711	\$ 6,400	\$ 5,362	\$ 25,802
Cost-reimbursement	—	3,812	890	5,195	9,897
Time-and-materials	806	3	61	1,900	2,770
Total revenue	\$ 8,135	\$ 10,526	\$ 7,351	\$ 12,457	\$ 38,469

Year Ended December 31, 2020	Aerospace	Marine Systems	Combat Systems	Technologies	Total Revenue
Fixed-price	\$ 7,402	\$ 6,924	\$ 6,159	\$ 5,794	\$ 26,279
Cost-reimbursement	—	3,045	997	5,300	9,342
Time-and-materials	673	10	67	1,554	2,304
Total revenue	\$ 8,075	\$ 9,979	\$ 7,223	\$ 12,648	\$ 37,925

Our segments operate under fixed-price, cost-reimbursement and time-and-materials contracts. Our production contracts are primarily fixed-price. Under these contracts, we agree to perform a specific scope of work for a fixed amount. Contracts for research, engineering, repair and maintenance, and other services are typically cost-reimbursement or time-and-materials. Under cost-reimbursement contracts,

the customer reimburses contract costs incurred and pays a fixed, incentive or award-based fee. The amount for an incentive or award fee is determined by our ability to achieve targets set in the contract, such as cost, quality, schedule and performance. Under time-and-materials contracts, the customer pays a fixed hourly rate for direct labor and generally reimburses us for the cost of materials.

Each of these contract types presents advantages and disadvantages. Typically, we assume more risk with fixed-price contracts. However, these types of contracts offer additional profits when we complete the work for less than originally estimated. Cost-reimbursement contracts generally subject us to lower risk. Accordingly, the associated base fees are usually lower than fees earned on fixed-price contracts. Under time-and-materials contracts, our profit may vary if actual labor-hour rates vary significantly from the negotiated rates. Also, because these contracts can provide little or no fee for managing material costs, the content mix can impact profitability.

Revenue by customer was as follows:

Year Ended December 31, 2022	Aerospace	Marine Systems	Combat Systems	Technologies	Total Revenue
U.S. government:					
Department of Defense (DoD)	\$ 313	\$ 10,874	\$ 4,082	\$ 6,981	\$ 22,250
Non-DoD	—	2	9	4,797	4,808
Foreign military sales (FMS)	120	158	325	30	633
Total U.S. government	433	11,034	4,416	11,808	27,691
U.S. commercial	5,236	3	237	233	5,709
Non-U.S. government	587	3	2,563	404	3,557
Non-U.S. commercial	2,311	—	92	47	2,450
Total revenue	\$ 8,567	\$ 11,040	\$ 7,308	\$ 12,492	\$ 39,407

Year Ended December 31, 2021					
U.S. government:					
DoD	\$ 255	\$ 10,325	\$ 3,869	\$ 6,937	\$ 21,386
Non-DoD	—	6	10	4,846	4,862
FMS	84	186	294	34	598
Total U.S. government	339	10,517	4,173	11,817	26,846
U.S. commercial	4,381	3	223	201	4,808
Non-U.S. government	622	4	2,881	415	3,922
Non-U.S. commercial	2,793	2	74	24	2,893
Total revenue	\$ 8,135	\$ 10,526	\$ 7,351	\$ 12,457	\$ 38,469

Year Ended December 31, 2020					
U.S. government:					
DoD	\$ 394	\$ 9,656	\$ 3,813	\$ 6,977	\$ 20,840
Non-DoD	—	9	12	4,705	4,726
FMS	119	206	366	46	737
Total U.S. government	513	9,871	4,191	11,728	26,303
U.S. commercial	4,268	97	254	272	4,891
Non-U.S. government	221	9	2,704	551	3,485
Non-U.S. commercial	3,073	2	74	97	3,246
Total revenue	\$ 8,075	\$ 9,979	\$ 7,223	\$ 12,648	\$ 37,925

Contract Balances. The timing of revenue recognition, billings and cash collections results in billed accounts receivable, unbilled receivables (contract assets), and customer advances and deposits (contract liabilities) on the Consolidated Balance Sheet. In our defense segments, amounts are billed as work progresses in accordance with agreed-upon contractual terms, either at periodic intervals (e.g., biweekly or monthly) or upon achievement of contractual milestones. Generally, billing occurs subsequent to revenue recognition, resulting in contract assets. However, we sometimes receive advances or deposits from our customers, particularly on our international contracts, before revenue is recognized, resulting in contract liabilities. These assets and liabilities are reported on the Consolidated Balance Sheet on a contract-by-contract basis at the end of each reporting period. In our Aerospace segment, we generally receive deposits from customers upon contract execution and upon achievement of contractual milestones. These deposits are liquidated when revenue is recognized. Changes in the contract asset and liability balances during the year ended December 31, 2022, were not materially impacted by any other factors.

Revenue recognized in 2022, 2021 and 2020 that was included in the contract liability balance at the beginning of each year was \$4 billion, \$3.4 billion and \$3.8 billion, respectively. This revenue represented primarily the sale of business jet aircraft.

C. EARNINGS PER SHARE

We compute basic earnings per share (EPS) using net earnings for the period and the weighted average number of common shares outstanding during the period. Basic weighted average shares outstanding decreased in 2022 and 2021 due to share repurchases. See Note N for further discussion of our share repurchases. Diluted EPS incorporates the additional shares issuable upon the assumed exercise of stock options and the release of restricted stock and restricted stock units (RSUs).

Basic and diluted weighted average shares outstanding were as follows (in thousands):

Year Ended December 31	2022	2021	2020
Basic weighted average shares outstanding	275,311	280,427	286,922
Dilutive effect of stock options and restricted stock/RSUs*	2,858	1,590	991
Diluted weighted average shares outstanding	278,169	282,017	287,913

* Excludes outstanding options to purchase shares of common stock that had exercise prices in excess of the average market price of our common stock during the year and, therefore, the effect of including these options would be antidilutive. These options totaled 1,466 in 2022, 5,037 in 2021 and 7,159 in 2020.

D. INCOME TAXES

Income Tax Provision. We calculate our provision for federal, state and foreign income taxes based on current tax law. The following is a summary of our net provision for income taxes for continuing operations:

Year Ended December 31	2022	2021	2020
Current:			
U.S. federal	\$ 649	\$ 515	\$ 558
State	52	30	8
Foreign	123	137	132
Total current	824	682	698
Deferred:			
U.S. federal	(196)	(53)	(130)
State	(11)	(5)	(2)
Foreign	29	(8)	5
Total deferred	(178)	(66)	(127)
Provision for income taxes, net	\$ 646	\$ 616	\$ 571
Net income tax payments	\$ 1,245	\$ 740	\$ 764

The reported tax provision differs from the amounts paid because some income and expense items are recognized in different time periods for financial reporting than for income tax purposes. This includes the impact of the requirement, effective January 1, 2022, to capitalize and amortize over five years certain research and experimental expenditures that were previously deductible immediately for tax purposes, which contributed to increased net income tax payments and is reflected in the net deferred tax liability related to intangible assets.

State and local income taxes allocable to U.S. government contracts are included in operating costs and expenses in the Consolidated Statement of Earnings and, therefore, are not included in the provision above.

The reconciliation from the statutory federal income tax rate to our effective income tax rate follows:

Year Ended December 31	2022	2021	2020
Statutory federal income tax rate	21.0%	21.0%	21.0%
Domestic tax credits	(1.5)	(2.0)	(4.6)
Equity-based compensation	(0.8)	(0.1)	(0.2)
Foreign-derived intangible income	(1.6)	(1.5)	(2.1)
State tax on commercial operations, net of federal benefits	0.8	0.5	0.1
Global impact of international operations	0.1	(1.0)	1.9
Tax impact of restructuring	(1.9)	—	—
Other, net	(0.1)	(1.0)	(0.8)
Effective income tax rate	16.0%	15.9%	15.3%

Net Deferred Tax Liability. The tax effects of temporary differences between reported earnings and taxable income consisted of the following:

December 31	2022	2021
Retirement benefits	\$ 461	\$ 570
Lease liabilities	373	370
Tax loss and credit carryforwards	259	294
Salaries and wages	200	236
Workers' compensation	135	161
Other	358	365
Deferred assets	1,786	1,996
Valuation allowances	(237)	(258)
Net deferred assets	\$ 1,549	\$ 1,738
Intangible assets	\$ (731)	\$ (1,059)
Property, plant and equipment	(444)	(412)
Lease right-of-use assets	(356)	(367)
Contract accounting methods	(291)	(259)
Capital Construction Fund qualified ships	(57)	(57)
Other	(316)	(411)
Deferred liabilities	\$ (2,195)	\$ (2,565)
Net deferred tax liability	\$ (646)	\$ (827)

Our deferred tax assets and liabilities are included in other noncurrent assets and liabilities on the Consolidated Balance Sheet. Our net deferred tax liability consisted of the following:

December 31	2022	2021
Deferred tax asset	\$ 39	\$ 41
Deferred tax liability	(685)	(868)
Net deferred tax liability	\$ (646)	\$ (827)

We believe it is more likely than not that we will generate sufficient taxable income in future periods to realize our deferred tax assets, subject to the valuation allowances recognized.

Our deferred tax balance associated with our retirement benefits includes a deferred tax asset of \$637 on December 31, 2022, and \$692 on December 31, 2021, related to the amounts recorded in accumulated other comprehensive loss (AOCL) to recognize the funded status of our retirement plans. For a reconciliation of the increase in funded status of our defined benefit plans in 2022, see Note S.

One of our deferred tax liabilities results from our participation in the Capital Construction Fund (CCF), a program established by the U.S. government and administered by the Maritime Administration that supports the acquisition, construction, reconstruction or operation of U.S. flag merchant marine vessels. The program allows us to defer federal and state income taxes on earnings derived from eligible programs as long as the proceeds are deposited in the fund and withdrawals are used for qualified activities. We had U.S. government accounts receivable pledged (and thereby deposited) to the CCF of \$299 and \$295 on December 31, 2022 and 2021, respectively.

On December 31, 2022, we had net operating loss carryforwards of \$912, substantially all of which are associated with jurisdictions that have an indefinite carryforward period.

Tax Uncertainties. We participate in the Internal Revenue Service (IRS) Compliance Assurance Process (CAP), a real-time audit of our consolidated federal corporate income tax return. The IRS has examined our consolidated federal income tax returns through 2021.

For all periods open to examination by tax authorities, we periodically assess our liabilities and contingencies based on the latest available information. Where we believe there is more than a 50% chance that our tax position will not be sustained, we record our best estimate of the resulting tax liability, including interest, in the Consolidated Financial Statements. We include any interest or penalties incurred in connection with income taxes as part of income tax expense.

Based on all known facts and circumstances and current tax law, we believe the total amount of any unrecognized tax benefits on December 31, 2022, was not material to our results of operations, financial condition or cash flows. In addition, there are no tax positions for which it is reasonably possible that the unrecognized tax benefits will vary significantly over the next 12 months, producing, individually or in the aggregate, a material effect on our results of operations, financial condition or cash flows.

E. ACCOUNTS RECEIVABLE

Accounts receivable represent amounts billed and currently due from customers. Payment is typically received from our customers either at periodic intervals (e.g., biweekly or monthly) or upon achievement of contractual milestones. Accounts receivable consisted of the following:

December 31	2022	2021
Non-U.S. government	\$ 1,470	\$ 1,569
U.S. government	1,093	1,043
Commercial	445	429
Total accounts receivable	\$ 3,008	\$ 3,041

Receivables from non-U.S. government customers included amounts related to long-term production programs for the Spanish Ministry of Defence of \$1.2 billion and \$1.4 billion on December 31, 2022 and 2021, respectively. A different ministry, the Spanish Ministry of Industry, has funded work on these programs in advance of costs incurred by the company. The cash advances are reported on the Consolidated Balance Sheet in current customer advances and deposits and will be repaid to the Ministry of Industry as we collect on the outstanding receivables from the Ministry of Defence. The net amounts for these programs on December 31, 2022 and 2021, were advance payments of \$91 and \$55, respectively. With respect to our other receivables, we expect to collect substantially all of the year-end 2022 balance during 2023.

F. UNBILLED RECEIVABLES

Unbilled receivables represent revenue recognized on long-term contracts (contract costs and estimated profits) less associated advances and progress billings. These amounts will be billed in accordance with the agreed-upon contractual terms. Unbilled receivables consisted of the following:

December 31	2022	2021
Unbilled revenue	\$ 39,482	\$ 39,566
Advances and progress billings	(30,687)	(31,068)
Net unbilled receivables	\$ 8,795	\$ 8,498

On December 31, 2022 and 2021, net unbilled receivables included \$2.7 billion and \$3.3 billion, respectively, associated with two large international contracts in our Combat Systems segment. A wheeled vehicle contract, originally negotiated in 2012, was amended in 2020 to include a revised payment schedule that addressed a build-up in unbilled receivables. Under the amended contract, we have received progress payments in 2021 and 2022 that have reduced the program's unbilled balance to \$1 billion as of December 31, 2022. The remaining scheduled progress payments will liquidate the net unbilled receivables balance by the end of 2023. A separate tracked vehicle contract signed in 2010 has been experiencing an unbilled receivables build-up since 2021 resulting in a \$1.7 billion balance as of December 31, 2022. Based on ongoing discussions with the customer, we expect payments to resume in the first quarter of 2023 assuming continued successful program activity. Other than the balance related to the tracked vehicle contract, we expect to bill substantially all of the remaining year-end 2022 net unbilled receivables balance during 2023, and the amount not expected to be billed in 2023 results primarily from the agreed-upon contractual billing terms.

G&A costs in unbilled revenue on December 31, 2022 and 2021, were \$559 and \$501, respectively.

G. INVENTORIES

The majority of our inventories are for business jet aircraft. Our inventories are stated at the lower of cost or net realizable value. Work in process represents largely labor, material and overhead costs associated with aircraft in the manufacturing process and is based primarily on the estimated average unit cost in a production lot. Substantially all of our raw materials are valued on either the average cost or the first-in, first-out method. We record pre-owned aircraft acquired in connection with the sale of new aircraft at the lower of the trade-in value or the estimated net realizable value.

Inventories consisted of the following:

December 31	2022	2021
Work in process	\$ 4,182	\$ 3,654
Raw materials	2,072	1,651
Finished goods	17	22
Pre-owned aircraft	51	13
Total inventories	\$ 6,322	\$ 5,340

The increase in total inventories during 2022 was due primarily to the ramp-up in production of new Gulfstream aircraft models announced in the last three years, as well as increased production of in-service aircraft reflecting strong customer demand. Customer deposits associated with firm orders for these aircraft, which are reflected in customer advances and deposits and other noncurrent liabilities on the Consolidated Balance Sheet, have correspondingly increased.

H. GOODWILL AND INTANGIBLE ASSETS

Goodwill. The changes in the carrying amount of goodwill by reporting unit were as follows:

	Aerospace	Marine Systems	Combat Systems	Technologies	Total Goodwill
December 31, 2020 (a)	\$ 3,065	\$ 297	\$ 2,786	\$ 13,905	\$ 20,053
Acquisitions (b)	33	—	54	—	87
Other (c)	(59)	—	(13)	30	(42)
December 31, 2021 (a)	3,039	297	2,827	13,935	20,098
Acquisitions	—	—	—	336	336
Other (c)	(20)	—	(61)	(19)	(100)
December 31, 2022 (a)	\$ 3,019	\$ 297	\$ 2,766	\$ 14,252	\$ 20,334

(a) Goodwill in the Technologies reporting unit was net of \$1.8 billion of accumulated impairment losses.

(b) Included adjustments during the purchase price allocation period.

(c) Consisted primarily of adjustments for foreign currency translation.

Intangible Assets. Intangible assets consisted of the following:

	Gross Carrying Amount (a)	Accumulated Amortization	Net Carrying Amount	Gross Carrying Amount (a)	Accumulated Amortization	Net Carrying Amount
December 31	2022			2021		
Contract and program intangible assets (b)	\$ 3,247	\$ (1,688)	\$ 1,559	\$ 3,239	\$ (1,547)	\$ 1,692
Trade names and trademarks	496	(248)	248	501	(238)	263
Technology and software	64	(48)	16	70	(48)	22
Other intangible assets	64	(63)	1	64	(63)	1
Total intangible assets	\$ 3,871	\$ (2,047)	\$ 1,824	\$ 3,874	\$ (1,896)	\$ 1,978

(a) Changes in gross carrying amounts consisted primarily of adjustments for write-offs of fully amortized intangible assets, acquired intangible assets and foreign currency translation.

(b) Consisted of acquired backlog and probable follow-on work and associated customer relationships.

We did not recognize any impairments of our intangible assets in 2022, 2021 or 2020. The amortization lives (in years) of our intangible assets on December 31, 2022, were as follows:

Intangible Asset	Range of Amortization Life
Contract and program intangible assets	7-30
Trade names and trademarks	30
Technology and software	7-15
Other intangible assets	7

Amortization expense is included in operating costs and expenses in the Consolidated Statement of Earnings. Amortization expense for intangible assets was \$202 in 2022, \$226 in 2021 and \$261 in 2020. We expect to record annual amortization expense over the next five years as follows:

Year Ended December 31	Amortization Expense
2023	\$ 192
2024	181
2025	174
2026	169
2027	158

I. PROPERTY, PLANT AND EQUIPMENT, NET

Property, plant and equipment (PP&E) is carried at historical cost, net of accumulated depreciation. Net PP&E by major asset class consisted of the following:

December 31	2022	2021
Machinery and equipment	\$ 6,620	\$ 6,281
Buildings and improvements	4,238	3,712
Construction in process	1,020	1,057
Land and improvements	414	414
Total PP&E	12,292	11,464
Accumulated depreciation	(6,392)	(6,047)
PP&E, net	\$ 5,900	\$ 5,417

We depreciate most of our assets using the straight-line method and the remainder using accelerated methods. Buildings and improvements are depreciated over periods of up to 50 years. Machinery and equipment are depreciated over periods of up to 30 years. Our government customers provide certain facilities and equipment for our use that are not included above.

J. LEASES

We determine at its inception whether an arrangement that provides us control over the use of an asset is a lease. We recognize at lease commencement a right-of-use (ROU) asset and lease liability based on the present value of the future lease payments over the lease term. We have elected not to recognize an ROU asset and lease liability for leases with terms of 12 months or less. Some of our leases include options to extend the term of the lease for up to 29 years or to terminate the lease within one year. When it is reasonably certain that we will exercise the option, we include the impact of the option in the lease term for purposes of determining total future lease payments. As most of our lease agreements do not explicitly state the discount rate implicit in the lease, we use our incremental borrowing rate on the commencement date to calculate the present value of future payments.

Certain of our leases include variable payments, which may be calculated based on the Consumer Price Index (CPI) or similar indices at the lease commencement date. To the extent these variable payments are not considered fixed, we exclude such payments from the ROU asset and lease liability and expense as incurred. In addition to the present value of the future lease payments, the calculation of the ROU asset also includes any deferred rent, lease pre-payments and initial direct costs of obtaining the lease, such as commissions.

In addition to the base rent, real estate leases typically contain provisions for common-area maintenance and other similar services, which are considered non-lease components for accounting purposes. For our real estate leases, we apply a practical expedient to include these non-lease components in calculating the ROU asset and lease liability. For all other types of leases, non-lease components are excluded from our ROU assets and lease liabilities and expensed as incurred.

Our leases are for office space, manufacturing facilities, and machinery and equipment. Real estate represents more than 75% of our lease obligations.

The components of lease costs were as follows:

Year Ended December 31	2022	2021	2020
Finance lease cost:			
Amortization of ROU assets	\$ 96	\$ 96	\$ 94
Interest on lease liabilities	14	20	25
Operating lease cost	308	323	326
Short-term lease cost	68	71	62
Variable lease cost	23	18	12
Sublease income	(17)	(18)	(16)
Total lease costs, net	\$ 492	\$ 510	\$ 503

Additional information related to leases was as follows:

Year Ended December 31	2022	2021	2020
Cash paid for amounts included in the measurement of lease liabilities:			
Operating cash flows from operating leases	\$ 307	\$ 322	\$ 323
Operating cash flows from finance leases	13	21	25
Financing cash flows from finance leases	80	66	64
ROU assets obtained in exchange for lease liabilities:			
Operating leases	297	249	205
Finance leases	4	27	45

Additional quantitative lease information was as follows:

December 31	2022	2021
Weighted-average remaining lease term:		
Operating leases	12.4 years	11.5 years
Finance leases	15.7 years	13.7 years
Weighted-average discount rate:		
Operating leases	3%	3%
Finance leases	4%	5%

The following is a reconciliation of future undiscounted cash flows to the operating and finance lease liabilities, and the related ROU assets, presented on the Consolidated Balance Sheet on December 31, 2022:

Year Ended December 31	Operating Leases	Finance Leases
2023	\$ 285	\$ 46
2024	232	29
2025	164	26
2026	129	24
2027	112	23
Thereafter	768	178
Total future lease payments	1,690	326
Less imputed interest	334	64
Present value of future lease payments	1,356	262
Less current portion of lease liabilities	250	38
Long-term lease liabilities	\$ 1,106	\$ 224
ROU assets	\$ 1,263	\$ 227

On December 31, 2021, operating and finance lease liabilities and the related ROU assets were as follows:

	Operating Leases	Finance Leases
Current portion of lease liabilities	\$ 258	\$ 79
Long-term lease liabilities	1,085	258
ROU assets	1,257	319

Lease liabilities are included on the Consolidated Balance Sheet in current and noncurrent other liabilities, while ROU assets are included in noncurrent other assets.

On December 31, 2022, we had additional future payments on leases that had not yet commenced of \$351. These leases will commence in 2023, and have lease terms ranging from one to 40 years.

K. DEBT

Debt consisted of the following:

December 31		2022	2021
Fixed-rate notes due:	Interest rate:		
November 2022	2.250%	\$ —	\$ 1,000
May 2023	3.375%	750	750
August 2023	1.875%	500	500
November 2024	2.375%	500	500
April 2025	3.250%	750	750
May 2025	3.500%	750	750
June 2026	1.150%	500	500
August 2026	2.125%	500	500
April 2027	3.500%	750	750
November 2027	2.625%	500	500
May 2028	3.750%	1,000	1,000
April 2030	3.625%	1,000	1,000
June 2031	2.250%	500	500
April 2040	4.250%	750	750
June 2041	2.850%	500	500
November 2042	3.600%	500	500
April 2050	4.250%	750	750
Other	Various	90	106
Total debt principal		10,590	11,606
Less unamortized debt issuance costs and discounts		94	111
Total debt		10,496	11,495
Less current portion		1,253	1,005
Long-term debt		\$ 9,243	\$ 10,490

In November 2022, we repaid fixed-rate notes of \$1 billion at the scheduled maturity using cash on hand. Interest payments associated with our debt were \$383 in 2022, \$433 in 2021 and \$459 in 2020.

The aggregate amounts of scheduled principal maturities of our debt are as follows:

Year Ended December 31	Debt Principal
2023	\$ 1,253
2024	505
2025	1,503
2026	1,003
2027	1,253
Thereafter	5,073
Total debt principal	\$ 10,590

On December 31, 2022, we had no commercial paper outstanding, but we maintain the ability to access the commercial paper market in the future. Separately, we have a \$4 billion committed bank credit facility for general corporate purposes and working capital needs and to support our commercial paper issuances. This credit facility expires in March 2027. We may renew or replace this credit facility in whole or in part at or prior to its expiration date. We also have an effective shelf registration on file with the Securities and Exchange Commission (SEC) that allows us to access the debt markets.

Our financing arrangements contain a number of customary covenants and restrictions. We were in compliance with all covenants and restrictions on December 31, 2022.

L. OTHER LIABILITIES

A summary of significant other liabilities by balance sheet caption follows:

December 31	2022	2021
Salaries and wages	\$ 1,116	\$ 1,022
Dividends payable	347	331
Lease liabilities	288	337
Workers' compensation	215	270
Retirement benefits	38	288
Other	1,250	1,292
Total other current liabilities	\$ 3,254	\$ 3,540
Retirement benefits	\$ 2,453	\$ 2,813
Customer deposits on commercial contracts	2,175	1,250
Lease liabilities	1,330	1,343
Other	2,475	2,558
Total other liabilities	\$ 8,433	\$ 7,964

M. COMMITMENTS AND CONTINGENCIES

Litigation

In 2015, Electric Boat Corporation, a subsidiary of General Dynamics Corporation, received a civil investigative demand from the U.S. Department of Justice regarding an investigation of potential False Claims Act violations relating to alleged failures of Electric Boat's quality system with respect to allegedly non-conforming parts purchased from a supplier. In 2016, Electric Boat was made aware that it is a defendant in a lawsuit related to this matter which had been filed under seal in U.S. district court. Also in 2016, the Suspending and Debarring Official for the U.S. Department of the Navy issued a show cause letter to Electric Boat requesting that Electric Boat respond to the official's concerns regarding Electric Boat's oversight and management with respect to its quality assurance systems for subcontractors and suppliers. Electric Boat responded to the show cause letter and engaged in discussions with the U.S. government.

In the third quarter of 2019, the Department of Justice declined to intervene in the qui tam action, noting that its investigation continues, and the court unsealed the relator's complaint. In the fourth quarter of 2020, the relator filed a second amended complaint. In the third quarter of 2021, the court dismissed the relator's complaint with prejudice. The relator appealed the dismissal of the complaint to the United States Court of Appeals. In the fourth quarter of 2022, the Court of Appeals heard oral

arguments on the appeal, and thereafter took the case under submission. Given the current status of these matters, we are unable to express a view regarding the ultimate outcome or, if the outcome is adverse, to estimate an amount or range of reasonably possible loss. Depending on the outcome of these matters, there could be a material impact on our results of operations, financial condition and cash flows.

Additionally, various other claims and legal proceedings incidental to the normal course of business are pending or threatened against us. These other matters relate to such issues as government investigations and claims, the protection of the environment, asbestos-related claims and employee-related matters. The nature of litigation is such that we cannot predict the outcome of these other matters. However, based on information currently available, we believe any potential liabilities in these other proceedings, individually or in the aggregate, will not have a material impact on our results of operations, financial condition or cash flows.

Environmental

We are subject to and affected by a variety of federal, state, local and foreign environmental laws and regulations. We are directly or indirectly involved in environmental investigations or remediation at some of our current and former facilities and third-party sites that we do not own but where we have been designated a potentially responsible party (PRP) by the U.S. Environmental Protection Agency or a state environmental agency. Based on historical experience, we expect that a significant percentage of the total remediation and compliance costs associated with these facilities will continue to be allowable contract costs and, therefore, recoverable under U.S. government contracts.

As required, we provide financial assurance for certain sites undergoing or subject to investigation or remediation. We accrue environmental costs when it is probable that a liability has been incurred and the amount can be reasonably estimated. Where applicable, we seek insurance recovery for costs related to environmental liabilities. We do not record insurance recoveries before collection is considered probable. Based on all known facts and analyses, we do not believe that our liability at any individual site, or in the aggregate, arising from such environmental conditions will be material to our results of operations, financial condition or cash flows. We also do not believe that the range of reasonably possible additional loss beyond what has been recorded would be material to our results of operations, financial condition or cash flows.

Other

Government Contracts. As a government contractor, we are subject to U.S. government audits and investigations relating to our operations, including claims for fines, penalties, and compensatory and treble damages. We believe the outcome of such ongoing government audits and investigations will not have a material impact on our results of operations, financial condition or cash flows.

In the performance of our contracts, we routinely request contract modifications that require additional funding from the customer. Most often, these requests are due to customer-directed changes in the scope of work. While we are entitled to recovery of these costs under our contracts, the administrative process with our customer may be protracted. Based on the circumstances, we periodically file requests for equitable adjustment (REAs) that are sometimes converted into claims. In some cases, these requests are disputed by our customer. We believe our outstanding modifications, REAs and other claims will be resolved without material impact to our results of operations, financial condition or cash flows.

Letters of Credit and Guarantees. In the ordinary course of business, we have entered into letters of credit, bank guarantees, surety bonds and other similar arrangements with financial institutions and insurance carriers totaling approximately \$1.4 billion on December 31, 2022. In addition, from time to

time and in the ordinary course of business, we contractually guarantee the payment or performance of our subsidiaries arising under certain contracts.

Aircraft Trade-ins. In connection with orders for new aircraft in contract backlog, our Aerospace segment has outstanding options with some customers to trade in aircraft as partial consideration in their new-aircraft transaction. These trade-in commitments are generally structured to establish the fair market value of the trade-in aircraft at a date generally 45 or fewer days preceding delivery of the new aircraft to the customer. At that time, the customer is required to either exercise the option or allow its expiration. Other trade-in commitments are structured to guarantee a predetermined trade-in value. These commitments present more risk in the event of an adverse change in market conditions. In either case, any excess of the preestablished trade-in price above the fair market value at the time the new aircraft is delivered is treated as a reduction of revenue in the new-aircraft sales transaction. As of December 31, 2022, the estimated change in fair market values from the date of the commitments was not material.

Labor Agreements. On December 31, 2022, approximately one-fifth of the employees of our subsidiaries were working under collectively bargained terms and conditions, including 62 collective agreements that we have negotiated directly with unions and works councils. A number of these agreements expire within any given year. Historically, we have been successful at renegotiating these labor agreements without any material disruption of operating activities. In 2023, we expect to negotiate the terms of 28 agreements covering approximately 12,600 employees. We do not expect the renegotiations will, either individually or in the aggregate, have a material impact on our results of operations, financial condition or cash flows.

Product Warranties. We provide warranties to our customers associated with certain product sales. We record estimated warranty costs in the period in which the related products are delivered. The warranty liability recorded at each balance sheet date is based generally on the number of months of warranty coverage remaining for the products delivered and the average historical monthly warranty payments. Warranty obligations incurred in connection with long-term production contracts are accounted for within the contract estimates at completion. Our other warranty obligations, primarily for business jet aircraft, are included in other current and noncurrent liabilities on the Consolidated Balance Sheet.

The changes in the carrying amount of warranty liabilities for each of the past three years were as follows:

Year Ended December 31	2022	2021	2020
Beginning balance	\$ 641	\$ 660	\$ 619
Warranty expense	99	104	113
Payments	(116)	(124)	(108)
Adjustments	(21)	1	36
Ending balance	\$ 603	\$ 641	\$ 660

N. SHAREHOLDERS' EQUITY

Authorized Stock. Our authorized capital stock consists of 500 million shares of \$1 per share par value common stock and 50 million shares of \$1 per share par value preferred stock. The preferred stock is issuable in series, with the rights, preferences and limitations of each series to be determined by our board of directors.

Shares Issued and Outstanding. On December 31, 2022, we had 481,880,634 shares of common stock issued and 274,411,106 shares of common stock outstanding, including unvested restricted stock of 488,890 shares. On December 31, 2021, we had 481,880,634 shares of common stock issued and 277,620,943 shares of common stock outstanding. No shares of our preferred stock were outstanding on either date. The only changes in our shares outstanding during 2022 and 2021 resulted from shares repurchased in the open market and share activity under our equity compensation plans. See Note R for additional details.

Share Repurchases. Our board of directors, from time to time, authorizes management to repurchase outstanding shares of our common stock on the open market. In 2022, we repurchased 5.3 million of our outstanding shares for \$1.2 billion. On December 31, 2022, 6.7 million shares remained authorized by our board of directors for repurchase, representing 2.4% of our total shares outstanding. We repurchased 10.3 million shares for \$1.8 billion in 2021 and 4.1 million shares for \$602 in 2020.

Dividends per Share. Our board of directors declared dividends per share of \$5.04 in 2022, \$4.76 in 2021 and \$4.40 in 2020. We paid cash dividends of \$1.4 billion in 2022, \$1.3 billion in 2021 and \$1.2 billion in 2020.

Accumulated Other Comprehensive Loss. The changes, pretax and net of tax, in each component of AOCL consisted of the following:

	Changes in Unrealized Cash Flow Hedges	Foreign Currency Translation Adjustments	Changes in Retirement Plans' Funded Status	AOCL
December 31, 2019	\$ 2	\$ 288	\$ (4,108)	\$ (3,818)
Other comprehensive income, pretax	366	353	(453)	266
Benefit from income tax, net	(96)	—	98	2
Other comprehensive income, net of tax	270	353	(355)	268
December 31, 2020	272	641	(4,463)	(3,550)
Other comprehensive income, pretax	(174)	(103)	2,365	2,088
Provision for income tax, net	46	—	(504)	(458)
Other comprehensive income, net of tax	(128)	(103)	1,861	1,630
December 31, 2021	144	538	(2,602)	(1,920)
Other comprehensive loss, pretax	(190)	(278)	241	(227)
Provision for income tax, net	50	—	(55)	(5)
Other comprehensive loss, net of tax	(140)	(278)	186	(232)
December 31, 2022	\$ 4	\$ 260	\$ (2,416)	\$ (2,152)

Amounts reclassified out of AOCL related primarily to changes in our retirement plans' funded status and included pretax recognized net actuarial losses and amortization of prior service credit. See Note S for these amounts, which are included in our net annual pension and other post-retirement benefit (credit) cost.

O. SEGMENT INFORMATION

We have four operating segments: Aerospace, Marine Systems, Combat Systems and Technologies. We organize our segments in accordance with the nature of products and services offered. We measure each segment's profitability based on operating earnings. As a result, we do not allocate net interest, other income and expense items, and income taxes to our segments.

Summary financial information for each of our segments follows:

Year Ended December 31	Revenue (a)			Operating Earnings			Revenue from U.S. Government		
	2022	2021	2020	2022	2021	2020	2022	2021	2020
Aerospace	\$ 8,567	\$ 8,135	\$ 8,075	\$ 1,130	\$ 1,031	\$ 1,083	\$ 433	\$ 339	\$ 513
Marine Systems	11,040	10,526	9,979	897	874	854	11,034	10,517	9,871
Combat Systems	7,308	7,351	7,223	1,075	1,067	1,041	4,416	4,173	4,191
Technologies	12,492	12,457	12,648	1,227	1,275	1,211	11,808	11,817	11,728
Corporate (b)	—	—	—	(118)	(84)	(56)	—	—	—
Total	\$39,407	\$38,469	\$37,925	\$ 4,211	\$ 4,163	\$ 4,133	\$27,691	\$26,846	\$26,303

(a) See Note B for additional revenue information by segment.

(b) Corporate operating costs consisted primarily of equity-based compensation expense.

The following is additional summary financial information for each of our segments:

Year Ended December 31	Identifiable Assets			Capital Expenditures			Depreciation and Amortization		
	2022	2021	2020	2022	2021	2020	2022	2021	2020
Aerospace	\$ 12,676	\$ 11,748	\$ 12,050	\$ 214	\$ 102	\$ 95	\$ 195	\$ 205	\$ 201
Marine Systems	5,864	5,294	4,488	530	573	604	191	165	145
Combat Systems	11,032	11,657	12,034	94	100	92	105	109	95
Technologies	19,700	19,490	19,663	175	111	172	383	401	428
Corporate	2,313	1,884	3,073	101	1	4	10	10	9
Total	\$51,585	\$50,073	\$51,308	\$ 1,114	\$ 887	\$ 967	\$ 884	\$ 890	\$ 878

The following table presents our revenue by geographic area based on the location of our customers:

Year Ended December 31	2022	2021	2020
North America:			
United States	\$ 33,400	\$ 31,654	\$ 31,194
Other	934	934	1,078
Total North America	34,334	32,588	32,272
Europe	2,238	2,675	2,846
Asia/Pacific	1,224	1,269	1,292
Africa/Middle East	1,365	1,703	1,249
South America	246	234	266
Total revenue	\$ 39,407	\$ 38,469	\$ 37,925

Our revenue from non-U.S. operations was \$4 billion in 2022, \$4.4 billion in 2021 and \$4.3 billion in 2020, and earnings from continuing operations before income taxes from non-U.S. operations were \$567 in 2022, \$588 in 2021 and \$585 in 2020. The long-lived assets associated with these operations were 4% of our total long-lived assets on December 31, 2022, 2021 and 2020.

P. FAIR VALUE

Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in the principal or most advantageous market in an orderly transaction between marketplace participants. Various valuation approaches can be used to determine fair value, each requiring different valuation inputs. The following hierarchy classifies the inputs used to determine fair value into three levels:

- Level 1 – quoted prices in active markets for identical assets or liabilities.
- Level 2 – inputs, other than quoted prices, observable by a marketplace participant either directly or indirectly.
- Level 3 – unobservable inputs significant to the fair value measurement.

We did not have any significant non-financial assets or liabilities measured at fair value on December 31, 2022 or 2021.

Our financial instruments include cash and equivalents, accounts receivable and payable, marketable securities held in trust and other investments, short- and long-term debt, and derivative financial instruments. The carrying values of cash and equivalents and accounts receivable and payable on the Consolidated Balance Sheet approximate their fair value. The following tables present the fair values of our other financial assets and liabilities on December 31, 2022 and 2021, and the basis for determining their fair values:

	Carrying Value	Fair Value	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Financial Assets (Liabilities)	December 31, 2022				
Measured at fair value:					
Marketable securities held in trust:					
Cash and equivalents	\$ 7	\$ 7	\$ —	\$ 7	\$ —
Available-for-sale debt securities	107	107	—	107	—
Commingled equity funds	42	42	42	—	—
Commingled fixed-income funds	6	6	6	—	—
Other investments	17	17	—	—	17
Cash flow hedge assets	109	109	—	109	—
Cash flow hedge liabilities	(67)	(67)	—	(67)	—
Measured at amortized cost:					
Short- and long-term debt principal	(10,590)	(9,773)	—	(9,773)	—
	December 31, 2021				
Measured at fair value:					
Marketable securities held in trust:					
Cash and equivalents	\$ 4	\$ 4	\$ —	\$ 4	\$ —
Available-for-sale debt securities	125	125	—	125	—
Equity securities	62	62	62	—	—
Other investments	12	12	—	—	12
Cash flow hedge assets	320	320	—	320	—
Cash flow hedge liabilities	(98)	(98)	—	(98)	—
Measured at amortized cost:					
Short- and long-term debt principal	(11,606)	(12,549)	—	(12,549)	—

Our Level 1 assets include commingled equity and fixed-income funds that are valued using a unit price or net asset value (NAV). These funds are actively traded and valued using quoted prices for identical securities from the market exchanges. The fair value of our Level 2 assets and liabilities, which consist primarily of fixed-income securities, cash flow hedges and our fixed-rate notes, is determined under a market approach using valuation models that incorporate observable inputs such as interest rates, bond yields and quoted prices for similar assets. Our Level 3 assets include direct private equity investments that are measured using inputs unobservable to a marketplace participant.

Q. DERIVATIVE FINANCIAL INSTRUMENTS AND HEDGING ACTIVITIES

We are exposed to market risk, primarily from foreign currency exchange rates, commodity prices and investments. We may use derivative financial instruments to hedge some of these risks as described below. We do not use derivative financial instruments for trading or speculative purposes.

Foreign Currency Risk. Our foreign currency exchange rate risk relates to receipts from customers, payments to suppliers and intercompany transactions denominated in foreign currencies. To the extent possible, we include terms in our contracts that are designed to protect us from this risk. Otherwise, we enter into derivative financial instruments, principally foreign currency forward purchase and sale

contracts, designed to offset and minimize our risk. The dollar-weighted two-year average maturity of these instruments generally matches the duration of the activities that are at risk.

Commodity Price Risk. We are subject to commodity price risk, primarily on long-term, fixed-price contracts. To the extent possible, we include terms in our contracts that are designed to protect us from these risks. Some of the protective terms included in our contracts are considered derivative financial instruments but are not accounted for separately because they are clearly and closely related to the host contract. We have not entered into any material commodity hedging contracts but may do so as circumstances warrant. We do not believe that changes in commodity prices will have a material impact on our results of operations or cash flows.

Investment Risk. Our investment policy allows for purchases of fixed-income securities with an investment-grade rating and a maximum maturity of up to five years. On December 31, 2022 and 2021, we held \$1.2 billion and \$1.6 billion in cash and equivalents, respectively, but held no marketable securities other than those held in trust to meet some of our obligations under workers' compensation and non-qualified pension plans. On December 31, 2022 and 2021, we held marketable securities in trust of \$162 and \$191, respectively. These marketable securities are reflected at fair value on the Consolidated Balance Sheet in other current and noncurrent assets. See Note P for additional details.

Hedging Activities. We had notional forward exchange contracts outstanding of \$6.9 billion and \$6.8 billion on December 31, 2022 and 2021, respectively. These derivative financial instruments are cash flow hedges and are reflected at fair value on the Consolidated Balance Sheet in other current assets and liabilities. See Note P for additional details.

Changes in fair value (gains and losses) related to derivative financial instruments that qualify as cash flow hedges are deferred in AOCL until the underlying transaction is reflected in earnings. Alternatively, gains and losses on derivative financial instruments that do not qualify for hedge accounting are recorded each period in earnings. All gains and losses from derivative financial instruments recognized in the Consolidated Statement of Earnings are presented in the same line item as the underlying transaction, generally operating costs and expenses.

Net gains and losses recognized in earnings on derivative financial instruments that do not qualify for hedge accounting were not material to our results of operations in any of the past three years. Net gains and losses reclassified to earnings from AOCL related to qualified hedges were also not material to our results of operations in any of the past three years, and we do not expect the amount of these gains and losses that will be reclassified to earnings during the next 12 months to be material.

We had no material derivative financial instruments designated as fair value or net investment hedges on December 31, 2022 and 2021.

Foreign Currency Financial Statement Translation. We translate foreign currency balance sheets from our international businesses' functional currency (generally the respective local currency) to U.S. dollars at the end-of-period exchange rates, and statements of earnings at the average exchange rates for each period. The resulting foreign currency translation adjustments are a component of AOCL.

We do not hedge the fluctuation in reported revenue and earnings resulting from the translation of these international operations' results into U.S. dollars. The impact of translating our non-U.S. operations' revenue and earnings into U.S. dollars was not material to our results of operations in any of the past three years. In addition, the effect of changes in foreign exchange rates on non-U.S. cash balances was not material in any of the past three years.

R. EQUITY COMPENSATION PLANS

Equity Compensation Overview. We have equity compensation plans for employees, as well as for non-employee members of our board of directors. The equity compensation plans seek to provide an effective means of attracting and retaining directors, officers and key employees, and to provide them with incentives to enhance our growth and profitability. Under the equity compensation plans, awards may be granted to officers, employees or non-employee directors in common stock, options to purchase common stock, restricted shares of common stock, participation units (including RSUs, stock appreciation rights and phantom stock units) or any combination of these.

Annually, we grant awards of stock options, restricted stock and RSUs to participants in our equity compensation plans in early March. Additionally, we may make limited ad hoc grants on a quarterly basis for new hires or promotions. We issue common stock under our equity compensation plans from treasury stock. On December 31, 2022, in addition to the shares reserved for issuance upon the exercise of outstanding stock options, approximately 18 million shares have been authorized for awards that may be granted in the future.

Equity-based Compensation Expense. Equity-based compensation expense is included in G&A expenses. The following table details the components of equity-based compensation expense recognized in net earnings in each of the past three years:

Year Ended December 31	2022	2021	2020
Stock options	\$ 71	\$ 46	\$ 43
Restricted stock/RSUs	59	53	58
Total equity-based compensation expense, net of tax	\$ 130	\$ 99	\$ 101

Stock Options. Stock options granted under our equity compensation plans are issued with an exercise price at the fair value of our common stock determined by the average of the high and low stock prices as listed on the New York Stock Exchange (NYSE) on the date of grant. Participants generally vest in stock options over three years – with 50% of the options vesting after two years and the remaining 50% vesting the following year – and expire 10 years after the grant date.

We recognize compensation expense related to stock options on a straight-line basis over the vesting period of the awards, net of estimated forfeitures, except for awards to retirement-eligible participants that are recognized on an accelerated basis effective with the 2022 grant. Estimated forfeitures are based on our historical forfeiture experience. We estimate the fair value of stock options on the date of grant using the Black-Scholes option pricing model with the following assumptions for each of the past three years:

Year Ended December 31	2022	2021	2020
Expected volatility	22.4-23.0%	26.7-27.3%	21.1-26.9%
Weighted average expected volatility	22.5%	27.3%	21.2%
Expected term (in months)	60	60	60
Risk-free interest rate	1.7-4.2%	0.6-1.2%	0.4-1.5%
Expected dividend yield	2.3%	2.9%	2.4%

We determine the above assumptions based on the following:

- Expected volatility is based on the historical volatility of our common stock over a period equal to the expected term of the option
- Expected term is based on assumptions used by a set of comparable peer companies
- Risk-free interest rate is the yield on a U.S. Treasury zero-coupon issue with a remaining term equal to the expected term of the option at the grant date
- Expected dividend yield is based on our historical dividend yield

The resulting weighted average fair value per stock option granted (in dollars) was \$38.93 in 2022, \$28.87 in 2021 and \$24.86 in 2020. Stock option expense reduced pretax operating earnings (and on a diluted per-share basis) by \$91 (\$0.26) in 2022, \$58 (\$0.16) in 2021 and \$55 (\$0.15) in 2020. On December 31, 2022, we had \$45 of unrecognized compensation cost related to stock options, which is expected to be recognized over a weighted average period of 1.5 years.

A summary of stock option activity during 2022 follows:

In Shares and Dollars	Shares Under Option	Weighted Average Exercise Price Per Share
Outstanding on December 31, 2021	11,930,414	\$ 170.83
Granted	1,782,730	232.74
Exercised	(2,544,434)	155.80
Forfeited/canceled	(391,652)	179.00
Outstanding on December 31, 2022	10,777,058	\$ 184.33
Vested and expected to vest on December 31, 2022	10,610,512	\$ 184.14
Exercisable on December 31, 2022	5,978,398	\$ 178.92

Summary information with respect to our stock options' intrinsic value and remaining contractual term on December 31, 2022, follows:

	Weighted Average Remaining Contractual Term (in years)	Aggregate Intrinsic Value
Outstanding	6.5	\$ 687
Vested and expected to vest	6.5	679
Exercisable	5.1	414

In the table above, intrinsic value is calculated as the excess, if any, of the market price of our stock on the last trading day of the year over the exercise price of the options. For stock options exercised, intrinsic value is calculated as the difference between the market price on the date of exercise and the exercise price. The total intrinsic value of stock options exercised was \$205 in 2022, \$62 in 2021 and \$57 in 2020.

Restricted Stock/RSUs. Grants of restricted stock are awards of shares of common stock. RSUs represent obligations that have a value derived from or related to the value of our common stock, and are payable in cash or common stock. The fair value of restricted stock and RSUs equals the average of the high and low market prices of our common stock as listed on the NYSE on the date of grant.

Participants generally vest in restricted stock and RSUs, over a three-year restriction period after the grant date, during which recipients may not sell, transfer, pledge, assign or otherwise convey their

restricted shares to another party. During this period, restricted stock recipients receive cash dividends on their restricted shares and are entitled to vote those shares, while RSU recipients receive dividend-equivalent units instead of cash dividends and are not entitled to vote their RSUs or dividend-equivalent units.

We grant RSUs with one or more performance measures (performance stock units or PSUs) determined by the compensation committee of the board of directors as described in our proxy statement. Depending on the company's performance, the number of PSUs earned may be less than, equal to or greater than the original number of PSUs awarded subject to a payout range.

We recognize compensation expense related to restricted stock and RSUs on a straight-line basis over the vesting period of the awards, except for restricted stock awards to retirement-eligible participants that are recognized on an accelerated basis. Compensation expense related to restricted stock and RSUs reduced pretax operating earnings (and on a diluted per-share basis) by \$74 (\$0.21) in 2022, \$68 (\$0.19) in 2021 and \$73 (\$0.20) in 2020. On December 31, 2022, we had \$73 of unrecognized compensation cost related to restricted stock and RSUs, which is expected to be recognized over a weighted average period of 1.8 years.

A summary of restricted stock and RSU activity during 2022 follows:

In Shares and Dollars	Shares/ Share-Equivalent Units	Weighted Average Grant-Date Fair Value Per Share
Nonvested at December 31, 2021	1,320,478	\$ 169.54
Granted	393,126	249.11
Vested	(395,165)	176.38
Forfeited	(50,888)	189.42
Nonvested at December 31, 2022	1,267,551	\$ 194.38

The total fair value of vesting shares was \$95 in 2022, \$52 in 2021 and \$103 in 2020.

S. RETIREMENT PLANS

We provide retirement benefits to eligible employees through a variety of plans:

- Defined contribution
- Defined benefit
 - Pension (qualified and non-qualified)
 - Other post-retirement benefit

Substantially all of our plans use a December 31 measurement date, consistent with our fiscal year.

Defined Contribution Plans

We provide eligible employees the opportunity to participate in defined contribution plans (commonly known as 401(k) plans), which permit contributions on a before-tax and after-tax basis. Employees may contribute to various investment alternatives. In most of these plans, we match a portion of the employees' contributions. Our contributions to these plans totaled \$415 in 2022, \$398 in 2021 and \$379 in 2020. The defined-contribution plans held approximately 16 million and 17 million shares of our common stock, representing approximately 6% of our outstanding shares, on December 31, 2022 and 2021.

Defined Benefit Plans

Plan Descriptions. We have trustee, qualified pension plans covering eligible employees aligned with the markets in our business: U.S. government, non-U.S. government and commercial. Some of these plans require employees to make contributions to the plan. We also sponsor several non-qualified pension plans, which provide eligible executives with additional benefits, including excess benefits over limits imposed on qualified plans by federal tax law. The principal factors affecting the benefits earned by participants in our pension plans are employees' years of service and compensation levels. Our primary U.S. pension plans, which comprise the majority of our unfunded obligation, were closed to new salaried participants on January 1, 2007, and were closed to new hourly participants in subsequent collective bargaining agreements over the next several years. Additionally, we have made several changes to these plans for certain participants that limit or cease the benefits that accrue for future service.

In addition to pension benefits, we maintain plans that provide post-retirement health care and life insurance coverage for certain employees and retirees. These benefits vary by employment status, age, service and salary level at retirement. The coverage provided and the extent to which the retirees share in the cost of the program vary throughout the company. The plans provide health care and life insurance benefits only to those employees who retire directly from our service and not to those who terminate service prior to eligibility for retirement.

Contributions. It is our policy to fund our qualified pension plans in a manner that optimizes the tax deductibility and contract recovery of contributions considered within our capital deployment framework. Therefore, we may make discretionary contributions in addition to the required contributions determined in accordance with IRS regulations. We contributed \$50 to our qualified pension plans in 2022. In 2023, our required contributions are \$114. In the first quarter of 2023, we also made a discretionary contribution of \$92, resulting in total expected pension plan contributions of \$206 in 2023.

We maintain several tax-advantaged accounts, primarily Voluntary Employees' Beneficiary Association (VEBA) trusts, to fund the obligations for some of our other post-retirement benefit plans. For non-funded plans, claims are paid as received. Contributions to our other post-retirement benefit plans were not material in 2022 and are not expected to be material in 2023.

Benefit Payments. We expect the following benefits to be paid from our defined benefit plans over the next 10 years:

	Pension Benefits	Other Post-retirement Benefits
2023	\$ 895	\$ 54
2024	918	52
2025	937	50
2026	957	49
2027	968	47
2028-2032	4,877	213

Benefit Cost. Our annual benefit cost consists of five primary elements:

- The cost of benefits earned by employees for services rendered during the year
- An interest charge on our plan liabilities
- An expected return on our plan assets for the year
- Actuarial gains and losses, which result from changes in assumptions and differences between actual and expected return on assets and participant experience
- The cost or credit attributed to prior service resulting from changes we make to plan benefit terms

For qualified pension plans and other post-retirement benefit plans, actuarial gains and losses and prior service costs or credits are initially deferred in AOCL and then amortized on a straight-line basis over future years. For our qualified U.S. government pension plans, we amortize actuarial gains and losses over a custom amortization period based on the amount of pension costs allocable to our U.S. government contracts. For the remaining qualified pension plans and other post-retirement benefit plans, we amortize only the amount of actuarial gains and losses that exceeds 10% of the greater of plan assets or benefit obligations. This amount is amortized over the average remaining service period of plan participants who are active employees unless all or almost all of a plan's participants are inactive or are not accruing additional benefits. In such cases, the amortization period is based on the average remaining life expectancy of the plan participants. To further reduce the volatility of our annual benefit cost, gains and losses resulting from the return on plan assets are included over five years in the determination of the amortizable amount of actuarial gains and losses. For non-qualified pension plans, we recognize actuarial gains and losses immediately.

Net annual benefit (credit) cost consisted of the following:

Year Ended December 31	Pension Benefits		
	2022	2021	2020
Service cost	\$ 102	\$ 119	\$ 115
Interest cost	400	360	491
Expected return on plan assets	(907)	(963)	(926)
Net actuarial loss	171	352	387
Prior service credit	(20)	(20)	(18)
Settlement/curtailment/other	4	70	—
Net annual benefit (credit) cost	\$ (250)	\$ (82)	\$ 49

Year Ended December 31	Other Post-retirement Benefits		
	2022	2021	2020
Service cost	\$ 6	\$ 10	\$ 10
Interest cost	19	19	27
Expected return on plan assets	(31)	(36)	(36)
Net actuarial gain	(16)	—	(3)
Prior service cost (credit)	1	—	(1)
Settlement/curtailment/other	(11)	—	—
Net annual benefit credit	\$ (32)	\$ (7)	\$ (3)

Our contractual arrangements with the U.S. government provide for the recovery of pension and other post-retirement benefit costs related to employees working on government contracts. The amount allocated to U.S. government contracts is determined in accordance with the Federal Acquisition Regulation (FAR) and Cost Accounting Standards (CAS), which may result in a timing difference with

the amount determined under GAAP. We defer this difference on the Consolidated Balance Sheet. At this time, the amount allocated to contracts exceeds cumulative benefit costs, resulting in a deferred credit that is reported in other noncurrent liabilities. To the extent there is a non-service component of net annual benefit (credit) cost for our defined benefit plans, it is reported in other income (expense) in the Consolidated Statement of Earnings.

Funded Status. We recognize an asset or liability on the Consolidated Balance Sheet equal to the funded status of each of our defined benefit plans. The funded status is the difference between the fair value of the plan's assets and its benefit obligation. The following is a reconciliation of the benefit obligations and plan/trust assets, and the resulting funded status, of our defined benefit plans:

Year Ended December 31	Pension Benefits		Other Post-retirement Benefits	
	2022	2021	2022	2021
Change in Benefit Obligation				
Benefit obligation at beginning of year	\$ (17,779)	\$ (19,692)	\$ (840)	\$ (1,062)
Service cost	(102)	(119)	(6)	(10)
Interest cost	(400)	(360)	(19)	(19)
Amendments	6	3	(1)	4
Actuarial gain	3,884	955	185	187
Settlement/curtailment/other	36	553	9	—
Benefits paid	850	881	55	60
Benefit obligation at end of year	\$ (13,505)	\$ (17,779)	\$ (617)	\$ (840)
Change in Plan/Trust Assets				
Fair value of assets at beginning of year	\$ 15,167	\$ 14,751	\$ 777	\$ 705
Actual return on plan assets	(2,916)	1,692	(115)	114
Employer contributions	50	135	—	—
Settlement/curtailment/other	(37)	(551)	—	—
Benefits paid	(829)	(860)	(36)	(42)
Fair value of assets at end of year	\$ 11,435	\$ 15,167	\$ 626	\$ 777
Funded status at end of year	\$ (2,070)	\$ (2,612)	\$ 9	\$ (63)

The overall decrease in our pension benefit obligation for the year ended December 31, 2022, was due primarily to actuarial gains created by the change in the weighted-average discount rate, which increased from 2.84% at December 31, 2021, to 5.08% at December 31, 2022.

The overall decrease in our pension benefit obligation for the year ended December 31, 2021, was due primarily to the settlement resulting from the 2021 purchase of an irrevocable group annuity contract to transfer certain pension obligations to an insurance company, and actuarial gains created by the change in the weighted-average discount rate, which increased from 2.54% at December 31, 2020, to 2.84% at December 31, 2021.

Amounts recognized on the Consolidated Balance Sheet consisted of the following:

December 31	Pension Benefits		Other Post-retirement Benefits	
	2022	2021	2022	2021
Noncurrent assets	\$ 169	\$ 134	\$ 261	\$ 292
Current liabilities	(23)	(176)	(15)	(112)
Noncurrent liabilities	(2,216)	(2,570)	(237)	(243)
Net (liability) asset recognized	\$ (2,070)	\$ (2,612)	\$ 9	\$ (63)

Amounts deferred in AOCL for our defined benefit plans consisted of the following:

December 31	Pension Benefits		Other Post-retirement Benefits	
	2022	2021	2022	2021
Net actuarial loss (gain)	\$ 3,404	\$ 3,639	\$ (299)	\$ (277)
Prior service (credit) cost	(61)	(76)	9	8
Total amount recognized in AOCL, pretax	\$ 3,343	\$ 3,563	\$ (290)	\$ (269)

The following is a reconciliation of the change in AOCL for our defined benefit plans:

Year Ended December 31	Pension Benefits		Other Post-retirement Benefits	
	2022	2021	2022	2021
Net actuarial gain	\$ (61)	\$ (1,684)	\$ (39)	\$ (265)
Prior service (credit) cost	(5)	(3)	2	(4)
Amortization of:				
Net actuarial (loss) gain from prior years	(171)	(352)	16	—
Prior service credit (cost)	20	20	(1)	—
Settlement/curtailment/other	(3)	(77)	1	—
Change in AOCL, pretax	\$ (220)	\$ (2,096)	\$ (21)	\$ (269)

A pension plan's funded status is the difference between the plan's assets and its projected benefit obligation (PBO). The PBO is the present value of future benefits attributed to employee services rendered to date, including assumptions about future compensation levels. On December 31, 2022 and 2021, most of our pension plans had a PBO that exceeded the plans' assets. Summary information for those plans follows:

December 31	2022	2021
PBO	\$ (12,897)	\$ (16,958)
Fair value of plan assets	10,657	14,213

A pension plan's accumulated benefit obligation (ABO) is the present value of future benefits attributed to employee services rendered to date, excluding assumptions about future compensation levels. The ABO for all pension plans was \$13.4 billion and \$17.5 billion on December 31, 2022 and 2021, respectively. The ABO for all other post-retirement plans was \$616 and \$840 on December 31, 2022 and 2021, respectively. On December 31, 2022 and 2021, most of our defined benefit plans had an ABO that exceeded the plans' assets. Summary information for those plans follows:

December 31	Pension Benefits		Other Post-retirement Benefits	
	2022	2021	2022	2021
ABO	\$ (12,793)	\$ (16,775)	\$ (270)	\$ (384)
Fair value of plan assets	10,657	14,213	20	36

Assumptions. We calculate the plan assets and liabilities for a given year and the net annual benefit cost for the subsequent year using assumptions determined as of December 31 of the year in question.

The following table summarizes the weighted average assumptions used to determine our benefit obligations:

Assumptions on December 31	2022	2021
Pension Benefits		
Benefit obligation discount rate	5.08%	2.84%
Rate of increase in compensation levels	2.62%	2.77%
Other Post-retirement Benefits		
Benefit obligation discount rate	5.16%	2.89%
Health care cost trend rate:		
Trend rate for next year	6.50%	5.50%
Ultimate trend rate	5.00%	5.00%
Year rate reaches ultimate trend rate	2032	2024

The following table summarizes the weighted average assumptions used to determine our net annual benefit cost:

Assumptions for Year Ended December 31	2022	2021	2020
Pension Benefits			
Discount rates:			
Benefit obligation	2.84%	2.54%	3.19%
Service cost	2.51%	2.25%	2.74%
Interest cost	2.31%	1.87%	2.78%
Expected long-term rate of return on assets	6.78%	7.14%	7.41%
Rate of increase in compensation levels	2.52%	2.63%	2.73%
Other Post-retirement Benefits			
Discount rates:			
Benefit obligation	2.89%	2.52%	3.18%
Service cost	3.32%	2.97%	3.35%
Interest cost	2.33%	1.83%	2.78%
Expected long-term rate of return on assets	5.12%	6.33%	6.86%

We base the discount rates on a current yield curve developed from a portfolio of high-quality, fixed-income investments with maturities consistent with the projected benefit payout period.

We determine the long-term rates of return on assets based on consideration of historical and forward-looking returns and the current and expected asset allocation. In 2022, we decreased the expected long-term rates of return on assets by 36 basis points for our pension plans and by 121 basis points for our other post-retirement benefit plans, resulting from changes in our asset allocations.

Retirement plan assumptions are based on our best judgment, including consideration of current and future market conditions. Given the long-term nature of the assumptions being made, actual outcomes can and often do differ from these estimates. Changes in these estimates impact future pension and other post-retirement benefit costs. As previously discussed, our contractual arrangements with the U.S. government provide for the recovery of pension and other post-retirement benefit costs. Therefore, the impact of annual changes in financial reporting assumptions on the cost for these plans does not immediately affect our operating results.

Assets. A committee of our board of directors is responsible for the strategic oversight of our defined benefit plan assets held in trust. Management develops investment policies and provides oversight of a third-party investment manager who reports to the committee on a regular basis. The outsourced third-party investment manager develops investment strategies and makes all day-to-day investment decisions related to defined benefit plan assets in accordance with our investment policy and target allocation percentages with the objective of generating future returns at or above our assumed long-term rates of return used to determine net annual benefit cost. In 2022, we selected a new outsourced third-party investment manager that has implemented an investment strategy utilizing primarily commingled funds versus the former outsourced third-party investment manager's strategy that utilized primarily investments in individually held equity and fixed-income securities.

Our investment policy endeavors to strike the appropriate balance between asset growth and funded status protection. The objective of the policy is to generate asset returns that will increase the funded status of our plans while systematically reducing cost and deficit risk as funded status of the plans improve. Several of our U.S. pension plans are now utilizing a target asset allocation strategy that will automatically increase investments in liability-hedging assets (primarily commingled fixed-income funds) and decrease investments in return-seeking assets (primarily commingled equity funds) as the plans reach specific funded status targets. At the end of 2022, our target asset allocation ranges for plans that are less than fully funded were 40-70% return-seeking assets and 30-60% liability-hedging assets.

More than 90% of our pension plan assets are held in a single trust for our primary qualified U.S. government and commercial pension plans. On December 31, 2022, the trust was invested largely in commingled funds comprised primarily of equity and fixed-income securities. The trust also invests in other asset classes consistent with our investment policy. Our investment policy allows the use of derivative instruments when appropriate to reduce anticipated asset volatility, to gain exposure to an asset class or to adjust the duration of fixed-income assets.

We hold assets in VEBA trusts for some of our other post-retirement benefit plans. On December 31, 2022, these trusts were invested largely in fixed-income securities and commingled funds comprised primarily of equity and fixed-income securities. Our asset allocation strategy for the VEBA trusts considers funded status, potential fluctuations in our other post-retirement benefit obligation, the taxable nature of certain VEBA trusts, tax deduction limits on contributions and the regulatory environment.

Our defined benefit plan assets are reported at fair value. See Note P for a discussion of the hierarchy for determining fair value. Our Level 1 assets include commingled equity and fixed-income funds that are valued using a unit price or NAV. These funds are actively traded and valued using quoted prices for identical securities from the market exchanges. Our Level 2 assets include fixed-income securities and commingled equity and fixed-income funds whose underlying investments are valued using observable marketplace inputs. The fair value of plan assets invested in fixed-income securities is generally determined under a market approach using valuation models that incorporate observable inputs such as interest rates, bond yields and quoted prices for similar assets. Our plan assets invested in Level 2 commingled funds are valued using a unit price or NAV obtained from the fund's transfer agent or

investment manager that is based on the underlying, observable investments of the fund. Our Level 3 assets consist of insurance deposit contracts, retirement annuity contracts and real estate funds.

Certain investments valued using NAV as a practical expedient are excluded from the fair value hierarchy. These investments are redeemable at NAV generally on a monthly or quarterly basis, and most have redemption notice periods of up to 90 days. The unfunded commitments related to these investments were not material on December 31, 2022 or 2021.

The fair value of our pension plan assets by investment category and the corresponding level within the fair value hierarchy were as follows:

Asset Category	Fair Value	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
	December 31, 2022			
Cash and equivalents	\$ 100	\$ 19	\$ 81	\$ —
Commingled funds:				
Equity funds	4,429	468	3,961	—
Fixed-income funds	5,798	275	5,523	—
Real estate funds	12	—	—	12
Other investments:				
Insurance deposit contracts	161	—	—	161
Retirement annuity contracts	23	—	—	23
Total plan assets in fair value hierarchy	\$ 10,523	\$ 762	\$ 9,565	\$ 196
Plan assets measured using NAV as a practical expedient*:				
Real estate funds	733			
Hedge funds	141			
Equity funds	38			
Total pension plan assets	\$ 11,435			

* Investments measured at fair value using NAV as a practical expedient are not classified in the fair value hierarchy. The fair value amounts presented in this table for these investments are included to permit reconciliation of the fair value hierarchy to the total plan assets.

Asset Category	Fair Value	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
	December 31, 2021			
Cash and equivalents	\$ 130	\$ 9	\$ 121	\$ —
Commingled funds:				
Equity funds	6,592	—	6,592	—
Fixed-income funds	430	—	430	—
Real estate funds	8	—	—	8
Equity securities (a):				
U.S. companies	1,143	1,143	—	—
Non-U.S. companies	151	151	—	—
Fixed-income securities:				
Corporate bonds (b)	4,090	—	4,090	—
Treasury securities	1,495	—	1,495	—
Other investments:				
Insurance deposit contracts	163	—	—	163
Retirement annuity contracts	35	—	—	35
Total plan assets in fair value hierarchy	\$ 14,237	\$ 1,303	\$ 12,728	\$ 206
Plan assets measured using NAV as a practical expedient (c):				
Real estate funds	632			
Hedge funds	260			
Equity funds	38			
Total pension plan assets	\$ 15,167			

(a) No single equity holding amounted to more than 1% of the total fair value.

(b) Our corporate bond investments had an average rating of A.

(c) Investments measured at fair value using NAV as a practical expedient are not classified in the fair value hierarchy. The fair value amounts presented in this table for these investments are included to permit reconciliation of the fair value hierarchy to the total plan assets.

The fair value of our other post-retirement benefit plan assets by category and the corresponding level within the fair value hierarchy were as follows:

Asset Category (a)	Fair Value	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)
	December 31, 2022		
Cash and equivalents	\$ 16	\$ —	\$ 16
Commingled funds:			
Equity funds	112	65	47
Fixed-income funds	75	10	65
Fixed-income securities	413	—	413
Total plan assets in fair value hierarchy	\$ 616	\$ 75	\$ 541
Plan assets measured using NAV as a practical expedient (b):			
Real estate funds	8		
Hedge funds	2		
Total other post-retirement benefit plan assets	\$ 626		

(a) We had no Level 3 investments on December 31, 2022.

(b) Investments measured at fair value using NAV as a practical expedient are not classified in the fair value hierarchy. The fair value amounts presented in this table for these investments are included to permit reconciliation of the fair value hierarchy to the total plan assets.

Asset Category (a)	Fair Value	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)
	December 31, 2021		
Cash and equivalents	\$ 12	\$ —	\$ 12
Commingled funds:			
Equity funds	354	—	354
Fixed-income funds	140	—	140
Real estate funds	2	2	—
Equity securities	105	105	—
Fixed-income securities	154	—	154
Total plan assets in fair value hierarchy	\$ 767	\$ 107	\$ 660
Plan assets measured using NAV as a practical expedient (b):			
Real estate funds	7		
Hedge funds	3		
Total other post-retirement benefit plan assets	\$ 777		

(a) We had no Level 3 investments on December 31, 2021.

(b) Investments measured at fair value using NAV as a practical expedient are not classified in the fair value hierarchy. The fair value amounts presented in this table for these investments are included to permit reconciliation of the fair value hierarchy to the total plan assets.

Changes in our Level 3 defined benefit plan assets during 2022 and 2021 were as follows:

	Insurance Deposits Contracts	Retirement Annuity Contracts	Private Equity Investments	Real Estate Funds	Total Level 3 Assets
December 31, 2020	\$ 157	\$ 38	\$ 33	\$ 90	\$ 318
Transfers out of Level 3	—	—	(33)	(82)	(115)
Actual return on plan assets:					
Unrealized gains (losses), net	9	(3)	—	—	6
Purchases, sales and settlements, net	(3)	—	—	—	(3)
December 31, 2021	163	35	—	8	206
Actual return on plan assets:					
Unrealized losses, net	(10)	(12)	—	—	(22)
Realized losses, net	—	—	—	(1)	(1)
Purchases, sales and settlements, net	8	—	—	5	13
December 31, 2022	\$ 161	\$ 23	\$ —	\$ 12	\$ 196

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Shareholders
General Dynamics Corporation:

Opinion on the Consolidated Financial Statements

We have audited the accompanying Consolidated Balance Sheet of General Dynamics Corporation and subsidiaries (the Company) as of December 31, 2022 and 2021, the related Consolidated Statements of Earnings, Comprehensive Income, Cash Flows, and Shareholders' Equity for each of the years in the three-year period ended December 31, 2022, and the related notes (collectively, the consolidated financial statements). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2022 and 2021, and the results of its operations and its cash flows for each of the years in the three-year period ended December 31, 2022, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2022, based on criteria established in *Internal Control - Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission, and our report dated February 7, 2023 expressed an unqualified opinion on the effectiveness of the Company's internal control over financial reporting.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matters

The critical audit matters communicated below are matters arising from the current period audit of the consolidated financial statements that were communicated or required to be communicated to the audit committee and that: (1) relate to accounts or disclosures that are material to the consolidated financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matters below, providing separate opinions on the critical audit matters or on the accounts or disclosures to which they relate.

Estimates used to recognize revenue for select long-term contracts

As discussed in Note B to the consolidated financial statements, accounting for long-term contracts involves the use of various techniques to estimate total contract revenue and costs. Revenue is recognized over time using costs incurred to date relative to total estimated costs at completion to measure progress toward satisfying performance obligations.

For a select group of long-term contracts in the defense segments, we identified the assessment of certain assumptions that are an input into the amount of revenue recognized during the period as a critical audit matter. Examples of these assumptions are estimates of labor hours, the cost of materials for the work to be performed and the transaction price. The evaluation of one or more of the assumptions used to recognize revenue for the select group of long-term contracts required a high level of subjective auditor judgment due to the nature of the individual contracts and related contract performance risks. Specifically, changes to certain assumptions may have a significant impact on the revenue recorded during the period.

The following are primary procedures we performed to address this critical audit matter. We evaluated the design and tested the operating effectiveness of certain internal controls related to the assumptions used to recognize revenue for the select group of long-term contracts. This included contract level controls over certain revenue and cost assumptions. For certain contracts, we compared the Company's historical estimates of costs to actual costs incurred to assess the Company's ability to estimate accurately. Based on the nature of the individual contract, we evaluated certain revenue and cost assumptions by:

- reading the underlying contract and any related amendments to obtain an understanding of the contractual requirements and related performance obligations
- assessing costs incurred to-date and the relative progress toward satisfying the performance obligation(s) of the contract
- assessing, if relevant, the estimated costs at completion on similar or predecessor contracts and programs
- inquiring of financial and operational personnel of the Company to identify factors that should be considered within the estimated costs at completion or indications of potential management bias
- inspecting correspondence, if any, between the Company and the customer regarding actual to-date and expected performance
- assessing the enforceable rights and obligations of the underlying contractual terms when changes to price or scope, or both, are not yet agreed
- analyzing the sufficiency of the Company's assessment of contract performance risks included within the estimated costs at completion.

Discount rates used in pension benefit obligation

As discussed in Note S to the consolidated financial statements, the Company's pension benefit obligation and the associated plan assets were \$13.5 billion and \$11.4 billion, respectively, on December 31, 2022. These balances resulted in a net liability of \$2.1 billion. The weighted average discount rate assumption used in estimating the pension benefit obligation as of December 31, 2022, of 5.08% was based on a current yield curve developed from a portfolio of

high-quality, fixed-income investments with maturities consistent with the projected benefit payout period. The selected discount rates have a significant effect on the measurement of the pension benefit obligation.

We identified the evaluation of the discount rates for certain plans' pension benefit obligations to be a critical audit matter. This is due to the specialized skills required to assess the discount rate assumption used to discount estimated future benefit payments. In addition, certain plans' pension benefit obligations were sensitive to changes in this assumption.

The following are the primary procedures we performed to address this critical audit matter. We evaluated the design and tested the operating effectiveness of certain internal controls related to the pension benefit obligation process. This included a control related to the determination of the discount rate assumption. We involved an actuarial professional with specialized skills and knowledge, who assisted in:

- evaluating the Company's methodology used to develop the discount rates
- recalculating discount rates using the cash flows and spot rates provided by the Company
- evaluating the Company's determination of the discount rates by comparing changes in the discount rates from the prior year against changes in published indices using publicly available market data.

/s/ KPMG LLP

We have served as the Company's auditor since 2002.

McLean, Virginia
February 7, 2023

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None.

ITEM 9A. CONTROLS AND PROCEDURES

EVALUATION OF DISCLOSURE CONTROLS AND PROCEDURES

Our management, under the supervision and with the participation of the Chief Executive Officer and the Chief Financial Officer, evaluated the effectiveness of our disclosure controls and procedures (as defined in Rule 13a-15(e) and Rule 15d-15(e) under the Securities Exchange Act of 1934, as amended) as of December 31, 2022. Based on this evaluation, the Chief Executive Officer and Chief Financial Officer concluded that, on December 31, 2022, our disclosure controls and procedures were effective.

The certifications of the company's Chief Executive Officer and Chief Financial Officer required under Section 302 of the Sarbanes-Oxley Act have been filed as Exhibits 31.1 and 31.2 to this report.

MANAGEMENT'S REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING

To the Shareholders of General Dynamics Corporation:

The management of General Dynamics Corporation is responsible for establishing and maintaining adequate internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act. Our internal control system was designed to provide reasonable assurance to our management and board of directors regarding the preparation and fair presentation of published financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Our management evaluated the effectiveness of our internal control over financial reporting as of December 31, 2022. In making this evaluation, we used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission in *Internal Control – Integrated Framework (2013)*. Based on our evaluation we believe that, as of December 31, 2022, our internal control over financial reporting is effective based on those criteria.

KPMG LLP has issued an audit report on the effectiveness of our internal control over financial reporting. The KPMG report immediately follows this report.

/s/ Phebe N. Novakovic

Phebe N. Novakovic

Chairman and Chief Executive Officer

/s/ Jason W. Aiken

Jason W. Aiken

Executive Vice President, Technologies
and Chief Financial Officer

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Shareholders
General Dynamics Corporation:

Opinion on Internal Control Over Financial Reporting

We have audited General Dynamics Corporation and subsidiaries' (the Company) internal control over financial reporting as of December 31, 2022, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission. In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2022, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Consolidated Balance Sheet of the Company as of December 31, 2022 and 2021, the related Consolidated Statements of Earnings, Comprehensive Income, Cash Flows, and Shareholders' Equity for each of the years in the three-year period ended December 31, 2022, and the related notes (collectively, the consolidated financial statements), and our report dated February 7, 2023 expressed an unqualified opinion on those consolidated financial statements.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audit also included performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control Over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only

in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ KPMG LLP

McLean, Virginia

February 7, 2023

CHANGES IN INTERNAL CONTROL OVER FINANCIAL REPORTING

There were no changes in our internal control over financial reporting that occurred during the quarter ended December 31, 2022, that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

ITEM 9B. OTHER INFORMATION

None.

ITEM 9C. DISCLOSURE REGARDING FOREIGN JURISDICTIONS THAT PREVENT INSPECTIONS

Not applicable.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

The information required to be set forth herein, except for the information included under Information About Our Executive Officers in Part I, is included in the sections titled "Election of the Board of Directors of the Company," "Governance of the Company – Our Ethos," "Audit Committee Report" and, if included, "Other Information – Delinquent Section 16(a) Reports" in our definitive proxy statement for our 2023 annual shareholders meeting (the Proxy Statement), which sections are incorporated herein by reference.

ITEM 11. EXECUTIVE COMPENSATION

The information required to be set forth herein is included in the sections titled "Governance of the Company – Director Compensation," "Compensation Discussion and Analysis," "Executive Compensation" and "Compensation Committee Report" in our Proxy Statement, which sections are incorporated herein by reference.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

The information required to be set forth herein is included in the sections titled “Security Ownership of Management” and “Security Ownership of Certain Beneficial Owners” in our Proxy Statement, which sections are incorporated herein by reference.

The information required to be set forth herein with respect to securities authorized for issuance under our equity compensation plans is included in the section titled “Equity Compensation Plan Information” in our Proxy Statement, which section is incorporated herein by reference.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

The information required to be set forth herein is included in the sections titled “Governance of the Company – Related Person Transactions Policy” and “Election of the Board of Directors of the Company – Director Independence” in our Proxy Statement, which sections are incorporated herein by reference.

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

Our independent registered public accounting firm is KPMG LLP, McLean, VA, Auditor ID: 185.

The information required to be set forth herein is included in the section entitled “Advisory Vote on the Selection of Independent Auditors – Audit and Non-Audit Fees” in our Proxy Statement, which section is incorporated herein by reference.

PART IV

ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

1. Consolidated Financial Statements

- Consolidated Statement of Earnings
- Consolidated Statement of Comprehensive Income
- Consolidated Balance Sheet
- Consolidated Statement of Cash Flows
- Consolidated Statement of Shareholders’ Equity
- Notes to Consolidated Financial Statements (A to S)

2. Index to Exhibits – General Dynamics Corporation

Commission File No. 1-3671

Exhibits listed below, which have been filed with the Securities and Exchange Commission (SEC) pursuant to the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as

amended, and which were filed as noted below, are hereby incorporated by reference and made a part of this report with the same effect as if filed herewith.

Exhibit Number	Description
3.1	<u>Restated Certificate of Incorporation of the company (incorporated herein by reference from the company's current report on Form 8-K, filed with the SEC on October 7, 2004)</u>
3.2	<u>Amended and Restated Bylaws of General Dynamics Corporation (as amended effective December 7, 2022) (incorporated herein by reference from the company's current report on Form 8-K, filed with the SEC on December 9, 2022)</u>
4.1	<u>Indenture dated as of August 27, 2001, among the company, the Guarantors (as defined therein) and The Bank of New York, as Trustee (incorporated herein by reference from the company's annual report on Form 10-K for the year ended December 31, 2017, filed with the SEC on February 12, 2018)</u>
4.2	<u>Seventh Supplemental Indenture dated as of November 6, 2012, among the company, the Guarantors (as defined therein) and The Bank of New York Mellon, as Trustee (incorporated herein by reference from the company's current report on Form 8-K, filed with the SEC on November 6, 2012)</u>
4.3	<u>Indenture dated as of March 24, 2015, among the company, the Guarantors (as defined therein) and The Bank of New York Mellon, as Trustee (incorporated herein by reference from the company's registration statement on Form S-3, filed with the SEC on March 24, 2015)</u>
4.4	<u>First Supplemental Indenture dated as of August 12, 2016, among the company, the Guarantors (as defined therein) and The Bank of New York Mellon, as Trustee (incorporated herein by reference from the company's current report on Form 8-K, filed with the SEC on August 12, 2016)</u>
4.5	<u>Second Supplemental Indenture dated as of September 14, 2017, among the company, the Guarantors (as defined therein) and The Bank of New York Mellon, as Trustee (incorporated herein by reference from the company's current report on Form 8-K, filed with the SEC on September 14, 2017)</u>
4.6	<u>Indenture dated as of March 22, 2018, among the company, the Guarantors (as defined therein) and The Bank of New York Mellon, as Trustee (incorporated herein by reference from the company's registration statement on Form S-3, filed with the SEC on March 22, 2018)</u>
4.7	<u>First Supplemental Indenture dated as of May 11, 2018, among the company, the Guarantors (as defined therein) and The Bank of New York Mellon, as Trustee (incorporated herein by reference from the company's current report on Form 8-K, filed with the SEC on May 11, 2018)</u>
4.8	<u>Second Supplemental Indenture, dated as of March 25, 2020, among General Dynamics Corporation, the Guarantors named therein and The Bank of New York Mellon, as Trustee (includes forms of 3.250% Notes due 2025, 3.500% Notes due 2027, 3.625% Notes due 2030, 4.250% Notes due 2040 and 4.250% Notes due 2050) (incorporated herein by reference from the company's current report on Form 8-K, filed with the SEC on March 25, 2020)</u>

- 4.9 [Third Supplemental Indenture, dated as of May 10, 2021, among General Dynamics Corporation, the Guarantors named therein and The Bank of New York Mellon, as Trustee \(includes forms of 1.150% Notes due 2026, 2.250% Notes due 2031 and 2.850% Notes due 2041\) \(incorporated herein by reference from the company's current report on Form 8-K, filed with the SEC on May 10, 2021\)](#)
- 4.10 [Description of General Dynamics Corporation's Securities Registered Pursuant to Section 12 of the Exchange Act**](#)
- 10.1* [General Dynamics Corporation Amended and Restated 2012 Equity Compensation Plan \(incorporated herein by reference from the company's registration statement on Form S-8 \(No. 333-217656\) filed with the SEC on May 4, 2017\)](#)
- 10.2* [Form of Non-Statutory Stock Option Agreement pursuant to the General Dynamics Corporation 2012 Equity Compensation Plan \(for certain executive officers who are subject to the company's Compensation Recoupment Policy\) \(incorporated herein by reference from the company's quarterly report on Form 10-Q for the period ended March 30, 2014, filed with the SEC on April 23, 2014\)](#)
- 10.3* [Form of Non-Statutory Stock Option Agreement pursuant to the General Dynamics Corporation 2012 Equity Compensation Plan \(for grants made March 4, 2015, through March 1, 2016, and including, as indicated therein, provisions for certain executive officers who are subject to the company's Compensation Recoupment Policy\) \(incorporated herein by reference from the company's quarterly report on Form 10-Q for the period ended April 5, 2015, filed with the SEC on April 29, 2015\)](#)
- 10.4* [Form of Non-Statutory Stock Option Agreement pursuant to the General Dynamics Corporation 2012 Equity Compensation Plan \(for grants beginning March 2, 2016, and including, as indicated therein, provisions for certain executive officers who are subject to the company's Compensation Recoupment Policy\) \(incorporated herein by reference from the company's quarterly report on Form 10-Q for the period ended April 3, 2016, filed with the SEC on April 27, 2016\)](#)
- 10.5* [Form of Non-Statutory Stock Option Agreement pursuant to the General Dynamics Corporation Amended and Restated 2012 Equity Compensation Plan \(for grants beginning May 3, 2017, and including, as indicated therein, provisions for certain executive officers who are subject to the company's Compensation Recoupment Policy\) \(incorporated herein by reference from the company's quarterly report on Form 10-Q for the period ended July 2, 2017, filed with the SEC on July 26, 2017\)](#)
- 10.6* [Form of Restricted Stock Award Agreement pursuant to the General Dynamics Corporation Amended and Restated 2012 Equity Compensation Plan \(for grants beginning May 3, 2017, and including, as indicated therein, provisions for certain executive officers who are subject to the company's Compensation Recoupment Policy\) \(incorporated herein by reference from the company's quarterly report on Form 10-Q for the period ended July 2, 2017, filed with the SEC on July 26, 2017\)](#)
- 10.7* [Form of Restricted Stock Unit Award Agreement pursuant to the General Dynamics Corporation Amended and Restated 2012 Equity Compensation Plan \(for grants beginning May 3, 2017\) \(incorporated herein by reference from the company's quarterly report on Form 10-Q for the period ended July 2, 2017, filed with the SEC on July 26, 2017\)](#)

- 10.8* [Form of Performance Restricted Stock Unit Award Agreement pursuant to the General Dynamics Corporation Amended and Restated 2012 Equity Compensation Plan \(for grants beginning May 3, 2017, and including, as indicated therein, provisions for certain executive officers who are subject to the company's Compensation Recoupment Policy\) \(incorporated herein by reference from the company's quarterly report on Form 10-Q for the period ended July 2, 2017, filed with the SEC on July 26, 2017\)](#)
- 10.9* [Form of Performance Stock Unit Award Agreement pursuant to the General Dynamics Corporation Amended and Restated 2012 Equity Compensation Plan \(for grants to named executive officers beginning March 6, 2019\) \(incorporated herein by reference from the company's quarterly report on Form 10-Q for the period ended March 31, 2019, filed with the SEC on April 24, 2019\)](#)
- 10.10* [Form of Non-Statutory Stock Option Award Agreement pursuant to the General Dynamics Corporation Amended and Restated 2012 Equity Compensation Plan \(for grants to named executive officers beginning March 4, 2020, and including, as indicated therein, provisions for certain named executive officers who are subject to the company's Compensation Recoupment Policy\) \(incorporated herein by reference from the company's quarterly report on Form 10-Q for the period ended March 29, 2020, filed with the SEC on April 29, 2020\)](#)
- 10.11* [Form of Restricted Stock Award Agreement pursuant to the General Dynamics Corporation Amended and Restated 2012 Equity Compensation Plan \(for grants to named executive officers beginning March 4, 2020, and including, as indicated therein, provisions for certain named executive officers who are subject to the company's Compensation Recoupment Policy\) \(incorporated herein by reference from the company's quarterly report on Form 10-Q for the period ended March 29, 2020, filed with the SEC on April 29, 2020\)](#)
- 10.12* [Form of Performance Stock Unit Award Agreement pursuant to the General Dynamics Corporation Amended and Restated 2012 Equity Compensation Plan \(for grants to named executive officers beginning March 4, 2020, and including, as indicated therein, provisions for certain named executive officers who are subject to the company's Compensation Recoupment Policy\) \(incorporated herein by reference from the company's quarterly report on Form 10-Q for the period ended March 29, 2020, filed with the SEC on April 29, 2020\)](#)
- 10.13* [Form of Non-Statutory Stock Option Award Agreement pursuant to the General Dynamics Corporation Amended and Restated 2012 Equity Compensation Plan \(for grants to executive officers beginning March 2, 2022, and including, as indicated therein, provisions for certain executive officers who are subject to the company's Compensation Recoupment Policy\) \(incorporated herein by reference from the company's quarterly report on Form 10-Q for the period ended April 3, 2022, filed with the SEC on April 27, 2022\)](#)
- 10.14* [Form of Restricted Stock Award Agreement pursuant to the General Dynamics Corporation Amended and Restated 2012 Equity Compensation Plan \(for grants to executive officers beginning March 2, 2022, and including, as indicated therein, provisions for certain executive officers who are subject to the company's Compensation Recoupment Policy\) \(incorporated herein by reference from the company's quarterly report on Form 10-Q for the period ended April 3, 2022, filed with the SEC on April 27, 2022\)](#)

- 10.15* [Form of Performance Stock Unit Award Agreement pursuant to the General Dynamics Corporation Amended and Restated 2012 Equity Compensation Plan \(for grants to executive officers beginning March 2, 2022, and including, as indicated therein, provisions for certain executive officers who are subject to the company's Compensation Recoupment Policy\) \(incorporated herein by reference from the company's quarterly report on Form 10-Q for the period ended April 3, 2022, filed with the SEC on April 27, 2022\)](#)
- 10.16* [Successor Retirement Plan for Directors \(incorporated herein by reference from the company's annual report on Form 10-K for the year ended December 31, 2001, filed with the SEC on March 29, 2002\)](#)
- 10.17* [General Dynamics Corporation Supplemental Savings Plan, amended and restated effective October 1, 2021 \(incorporated herein by reference from the company's quarterly report on Form 10-Q for the quarter ended October 3, 2021, filed with the SEC on October 27, 2021\)](#)
- 10.18* [Form of Severance Protection Agreement for executive officers \(incorporated herein by reference from the company's annual report on Form 10-K for the year ended December 31, 2016, filed with the SEC on February 6, 2017\)](#)
- 10.19* [General Dynamics Corporation Supplemental Retirement Plan, restated effective January 1, 2010 \(incorporating amendments through March 31, 2011\) \(incorporated herein by reference from the company's quarterly report on Form 10-Q for the quarterly period ended April 3, 2011, filed with the SEC on May 3, 2011\)](#)
- 10.20* [Amendment to the General Dynamics Corporation Supplemental Retirement Plan, effective January 5, 2015 \(incorporated herein by reference from the company's annual report on Form 10-K for the year ended December 31, 2014, filed with the SEC on February 9, 2015\)](#)
- 10.21* [Amendment to the General Dynamics Corporation Supplemental Retirement Plan, effective January 1, 2016 \(incorporated herein by reference from the company's annual report on Form 10-K for the year ended December 31, 2016, filed with the SEC on February 6, 2017\)](#)
- 10.22* [Amendment to the General Dynamics Corporation Supplemental Retirement Plan, effective January 1, 2019 \(incorporated herein by reference from the company's annual report on Form 10-K for the year ended December 31, 2018, filed with the SEC on February 13, 2019\)](#)
- 10.23* [Amendment to the General Dynamics Corporation Supplemental Retirement Plan, effective December 20, 2019 \(incorporated herein by reference from the company's annual report on Form 10-K for the year ended December 31, 2020, filed with the SEC on February 9, 2021\)](#)
- 21 [Subsidiaries**](#)
- 22 [Subsidiary Guarantors**](#)
- 23 [Consent of Independent Registered Public Accounting Firm**](#)
- 24 [Power of Attorney**](#)
- 31.1 [Certification by CEO pursuant to Section 302 of the Sarbanes-Oxley Act of 2002**](#)
- 31.2 [Certification by CFO pursuant to Section 302 of the Sarbanes-Oxley Act of 2002**](#)

32.1	<u>Certification by CEO pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002</u> **
32.2	<u>Certification by CFO pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002</u> **
101.INS	Inline eXtensible Business Reporting Language (XBRL) Instance Document – the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document.
101.SCH	Inline XBRL Taxonomy Extension Schema Document**
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document**
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document**
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document**
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document**
104	Cover Page Interactive Data File (embedded within the Inline XBRL document and contained in Exhibit 101)

* Indicates a management contract or compensatory plan or arrangement required to be filed pursuant to Item 15(b) of Form 10-K.

** Filed or furnished electronically herewith.

In accordance with Item 601(b)(4)(iii)(A) of Regulation S-K, copies of certain instruments defining the rights of holders of long-term debt of the company are not filed herewith. Pursuant to this regulation, we hereby agree to furnish a copy of any such instrument to the SEC upon request.

ITEM 16. FORM 10-K SUMMARY

None.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

GENERAL DYNAMICS CORPORATION

by /s/ William A. Moss

William A. Moss

Vice President and Controller

Dated: February 7, 2023

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below on February 7, 2023, by the following persons on behalf of the registrant and in the capacities indicated.

<u>/s/ Phebe N. Novakovic</u>	Chairman, Chief Executive Officer and Director
Phebe N. Novakovic	(Principal Executive Officer)
<u>/s/ Jason W. Aiken</u>	Executive Vice President, Technologies and Chief Financial Officer
Jason W. Aiken	(Principal Financial Officer)
<u>/s/ William A. Moss</u>	Vice President and Controller
William A. Moss	(Principal Accounting Officer)
*	
<u>Richard D. Clarke</u>	Director
*	
<u>James S. Crown</u>	Director
*	
<u>Rudy F. deLeon</u>	Director
*	
<u>Cecil D. Haney</u>	Director
*	
<u>Mark M. Malcolm</u>	Director
*	
<u>James N. Mattis</u>	Director
*	
<u>C. Howard Nye</u>	Director
*	
<u>Catherine B. Reynolds</u>	Director
*	
<u>Laura J. Schumacher</u>	Director
*	
<u>Robert K. Steel</u>	Director
*	
<u>John G. Stratton</u>	Director
*	
<u>Peter A. Wall</u>	Director

* By Gregory S. Gallopoulos pursuant to a Power of Attorney executed by the directors listed above, which has been filed as an exhibit hereto and incorporated herein by reference thereto.

/s/ Gregory S. Gallopoulos
Gregory S. Gallopoulos
Senior Vice President, General Counsel and Secretary